

RG-S20

RGOS 10.2(5)

©2009

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山 4 4 4 4 4 4

 4  4 **RGOS®** 4
 4  4
 4 锐捷®
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4

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RGOS[®]10.2(5) Ш

o

ā

o

[]	[]	Ш
{ x y ... }		Ш
[x y ...]		Ш
//	Ш	

3.

~ 注意:	Ч	Ч	Ш
& 说明:	Ч	Ч	Ч

CLI

alias

alias

no
alias

alias *mode command-alias original-command*
no alias *mode [original-command]*

1 A

mode
command-alias
original-command

2 A

EXEC

3 A

4 A

EXEC

h	help
p	ping
s	show
u	undebug
un	undebug

no alias exec

alias ?

Ruijie(config)# **alias ?**

aaa-gs AAA server group mode
 acl acl configure mode
 bgp Configure bgp Protocol
 config globle configure mode

*

**command-alias=original-command*

EXEC "s" "show" 山
 "s?" 's'

Ruijie# **s?**

*s=show show start-chat start-terminal-service

山

EXEC "sv" "show version"

Ruijie# **s?**

*s=show *sv="show version" show start-chat
 start-terminal-service

山

Ruijie# **s?**

show start-chat start-terminal-service

"ia" "ip address"

Ruijieig)# 9ff)# **ia ?**

A.B.C.D IP address

dhcp IP Address via DHCP

Ruijieig)# 9ff)# **ip address**

"ip address"

山

山

show aliases

山

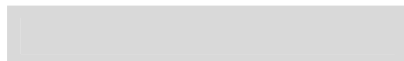
dhcp IP Address via DHCP

Ruijieig)# 9ff)#

```
*def-route="ip route 0.0.0.0 0.0.0.0 192.168.1.1"
Ruijie(config)# def-route?
% Unrecognized command.
Ruijie(config)# end
Ruijie# show aliases config
globe configure mode alias:
def-route          ip route 0.0.0.0 0.0.0.0 192.168.1.1
```

r

A



exec	
interface	
ip-dhcp-pool	DHCP
keychain	KeyChain
keychain-key	KeyChain-key
time-range	Time-Range

「 ㏿

CLI 1 "test" reload
 ㏿

Ruijie(config)# **enable secret level 1 0 test**
 Ruijie(config)# **privilege exec level 1 reload**

1 CLI reload

Ruijie> **reload ?**
 <cr>

reload 1 all

Ruijie(config)# **privilege exec all level 1 reload**

1 CLI reload

Ruijie> **reload ?**
 at reload at a specific time/date
 cancel cancel pending reload scheme
 in reload after a time interval
 <cr>

「 ㏿

enable secret	CLI

show aliases

EXEC

show aliases ㏿

show aliases [mode]

「 ㏿

mode

山

г д

г д

EXEC

г д

山

г д

EXEC

Ruijie# **show aliases exec**

exec mode alias:

h	help
p	ping
s	show
u	undebug
un	undebug

г д

alias	

CLI

- **disable**
- **enable**
- **enable password**
- **enable secret**
- **password**
- **login**
- **login local**
- **login authentication**
- **username**
- **lock**
- **lockable**
- **telnet**
- **enable service**

disable

disable

disable [*privilege-level*]

└─┬─┘

privilege-level

└─┬─┘

└─┬─┘

└─┘

└─┘

& 说明:

disable

山

Г Д

Ruijie# **disable 10**

Г Д

enable	山

enable

enable山

Э

Ю山

enable password

enable password山

no

山

enable password [*level level*] {*password* | [0 | 7] *encrypted-password*}

no enable password

Г Д

Password

EXEC

山

o 1 26

山

o

山

山

~ 注意:

EXEC 山

山

山

```

15 security 0
15
password security 15 password
security 15 password
password security
r A
pw10
Ruijie(config)# enable secret 0 pw10

```

```

r A

```

enable password	

password

```

line line password
no line
password {password | [0|7] encrypted-password}
no password
r A
password line
0|7 0 7
encrypted-password
r A
line
r A
line
r A
line red
Ruijie(config)# line vty 0
Ruijie(config-line)# password red
r A

```

login	⏏

login

```
AAA
login⏏ no ⏏
login
no login
r A
⏏
r A
line
r A
AAA
⏏ VTY console ⏏
r A
VTY ⏏
Ruijie(config)# no aaa new-model
Ruijie(config)# line vty 0
Ruijie(config-line)# password 0 normatest
Ruijie(config-line)# login
r A
```

password	line ⏏

login local

AAA

```

r      A
      W

r      A
      line

r      A
      AAA
      W      username      W

r      A
      VTY      W

Ruijie(config)# no aaa new-model
Ruijie(config)# username test password 0 test
Ruijie(config)# line vty 0
Ruijie(config-line)# login local

```

```

r      A

```

username	W

login authentication

```

      AAA      AAA
      W      no

      W

login authentication {default | list-name}
no login authentication {default | list-name}

r      A
      default
      list-name

r      A
      line

r      A
      AAA
      W

r      A

```

VTY

radius

山

```
Ruijie(config)# aaa new-model
Ruijie(config)# aaa authentication login default radius
Ruijie(config)# line vty 0
Ruijie(config-line)# login authentication default
```

r

A

aaa new-model	AAA
aaa authentication login	

username

username山

```
username name { nopassword | password { 6647431PBzMBi0KAP%imZ@
password { 6647431PBzMBi0KAP%imZ@ } } username
```

г д

15

Ruijie(config)# **username test privilege 15 password 0**
pw15

г д

login local	Ш

lock

EXEC

lockШ

lock

г д

г д

г д

Ш

1. **lock**

2. Ш

┆ Locked Ё

3.

line

lockable

line

Ш

г д

Ruijie(config-line)# **lockable**

Ruijie(config-line)# **end**

Ruijie# **lock**

Password: <password>

Again: <password>

Locked

Password: <password>

Ruijie#

Г А

lockable	Ш

lockable

lock lock line no lockable Ш

lockable

no lockable

Г А

Г А

line

Г А

EXEC lock Ш

Г А

```
Ruijie(config)# line console 0
Ruijie(config-line)# lockable
Ruijie(config-line)# end
Ruijie# lock
Password: <password>
Again: <password>
Locked
Password: <password>
Ruijie#
```

Г А

lock	Ш

ssh-server	SSH Server
telnet-server	Telnet Server
web-server	Http Server
snmp-agent	Snmp Agent

Г А

配置 Web 管理页面，**no ip http authentication**。

配置本地认证，**ip http authentication local**。

```
Ruijie(Config) # ip http authentication local
```

配置 Web 管理页面，**enable service**。

enable service	

ip http port

配置 HTTP 管理页面，**ip http port**。

配置 HTTP 管理页面，**ip http port number**。

```
Ruijie(Config) # ip http port number 8080
```

配置 HTTP 管理页面，**no ip http port**。

```
Ruijie(Config) # ip http port 8080
```

配置 HTTP 管理页面，**enable service**。

enable service	

-
- o clock set
 - o clock update-calendar
 - o exec-timeout
 - o hostname
 - o session-timeout
 - o show clock
 - o show cpu
 - o show cpu slot
 - o show memory
 - o show memory slot
 - o show running-config
 - o show startup-config
 - o reload
 - o show reload
 - o prompt
 - o banner motd
 - o banner login
 - o speed
 - o show line
 - o write

clock set

clock set

clock set *hh:mm:ss month day year*

r

г д

Ш

clock set

Ш

S2026G Ч S2026F Ч S2028

г д

2008 1 30 05 54 43

Ruijie# **clock set 05:54:43 1 30 2008**
Ruijie# **show clock**
05:54:43 CHN-BJ Wed 2008-01-30

г д

show clock	

clock update-calendar

clock clock privileged EXEC clock clock Ш
update-calendar
clock update-calendar

г д

г д

г д

calendar

Ш

Ш

S2026G Ч S2026F Ч S2028

г д

clock clockШ

Ruijie# **clock update-calendar**

exec-timeout

	LINE		exec-timeout	Ш
	no exec-timeout	LINE		Ш
	exec-timeout <i>minutes</i> [<i>seconds</i>]			
	no exec-timeout			
г	Д			
	<i>minutes</i>			
	<i>seconds</i>			
г	Д			
		10 min		Ш
г	Д			
	LINE			
г	Д			
	LINE			Ш
г	Д			
		line vty 0	5 30 :	
		Ruijie(config-line)# exec-timeout 5 30		

hostname

		hostname	Ш
	hostname <i>name</i>		
г	Д		
	<i>name</i>	4	Ш
	63		Ш
г	Д		
	Ruijie		Ш
г	Д		

```
 Ruijie(config)# authentication login
                                     CHAP
                                     
```

```
 Ruijie(config)# hostname BeiJingAgenda
BeiJingAgenda(config)#
```

session-timeout

```

                                     LINE
session-timeout 0 no session-timeout LINE
                                     
```

session-timeout *minutes* [*seconds*]
no session-timeout

```

 Ruijie(config)#
                                     minutes
                                     seconds
 Ruijie(config)#
                                     0 min
 Ruijie(config)#
                                     LINE
 Ruijie(config)#
                                     LINE
                                     LINE
 Ruijie(config)#
                                     line vty 0 5 30 :
Ruijie(config-line)# exec-timeout 5 30
```

show clock

```
show clock
show clock [detail]
```

г А

detail Ш

г А

г А

detail Ш

г А

show clock

Ruijie# show clock detail

05:54:43 CHN-BJ Wed 2008-01-30

Clock read from calendar when system boot.

г А

clock set	

show cpu

CPU Ш

show cpu

г А

г А

г А

CPU Ш

г А

show cpu

Ruijie# show cpu

CPU utilization in five seconds: 0%

CPU utilization in one minute : 35%

CPU utilization in five minutes: 33%

NO	5Sec	1Min	5Min	Process
0	0%	0%	0%	LISR INT

1	0%	0%	0%	HISR INT
2	0%	0%	0%	ktimer
3	0%	0%	0%	atimer
4	0%	0%	0%	printk_task
5	0%	0%	0%	waitqueue_process
6	0%	0%	0%	tasklet_task
7	0%	0%	0%	kevents
8	0%	0%	0%	snmpd
9	0%	0%	0%	snmp_trapd
10	0%	0%	0%	mtdblock
11	0%	35%	33%	gc_task
12	0%	0%	0%	Context
13	0%	0%	0%	kswapd
14	0%	0%	0%	bdflush
15	0%	0%	0%	kupdate
16	0%	0%	0%	bufcopy
17	0%	0%	0%	ll_mt
18	0%	0%	0%	ll main process
19	0%	0%	0%	ISDN MAIN
20	0%	0%	0%	tnet
21	0%	0%	0%	Tarptime
22	0%	0%	0%	gra_arp
23	0%	0%	0%	Ttcptimer
24	0%	0%	0%	gk process
25	0%	0%	0%	rl_con
26	100%	65%	67%	idle

show cpu

CPU utilization in five seconds	5 CPU
CPU utilization in one minute	1 CPU
CPU utilization in five minutes	5 CPU
NO	
Process	
5Sec	5 CPU
1Min	1 CPU
5Min	5 CPU

r A

--	--

show cpu slot	CPU
---------------	-----

show cpu slot

CPU 三

show cpu slot [*slot-number*]

Г Д

slot-number

CPU

Г Д

Г Д

CPU

三

Г Д

1 1 CPU 三

Ruijie# **show cpu slot 1**

CPU utilization for five seconds: 3%

CPU utilization for one minute : 2%

CPU utilization for five minutes: 1%

2 CPU 三

Ruijie# **show cpu slot**

slot 1 CPU information

CPU utilization for five seconds: 3%

CPU utilization for one minute : 2%

CPU utilization for five minutes: 1%

slot 3 CPU information

CPU utilization for five seconds: 5%

CPU utilization for one minute : 2%

CPU utilization for five minutes: 1%

Г Д

show running-config

show running-config

show running-config

r A

show startup-config

NVRAM

show startup-config

show startup-config

r A

r A

NVRAM

startup-config

reload

reload

reload [*text* | **in** [*hh:*] *mm* [*text*] | **at** *hh:mm* [*month day* | *day month*]
[*text*] | **cancel**]

r A

text 1-255
in [*hh:*] *mm* 24
at *hh:mm*
month 3 Mar
day 1 31
cancel

r A

r A

```
Ruijie# reload in 10
Router will reload in 600 seconds.
```

show reload

```
reload
show reload
```

prompt

```
no prompt
prompt string
```

string

```
32
```

山

EXEC

山

Г Д

RGOS

```
Ruijie(config)# prompt RGOS
Ruijie(config)# end
RGOS
```

banner motd

banner motd山

no banner motd

ureo

show line

show line 山

```

r      A

      memory          running-config      NVRAM      copy
      running-config startup-config

      network          TFTP          copy
      running-config tftp

      terminal          show running-config

```

```

r      A

```

```

r      A

```

```

      \

```

```

      memory      \

```

```

r      A

```

```

Ruijie# write
Building configuration...
[OK]

```

```

r      A

```



LINE

LINE

line

LINE

line [**aux** | **console** | **tty** | **vtty**] *first-line* [*last-line*]

「 ㏿

aux	
console	
tty	
vtty	telnet/ssh
<i>First-line</i>	first-line
<i>Last-line</i>	last-line

「 ㏿

「 ㏿

「 ㏿

LINE

「 ㏿

LINE VTY 1 3 LINE

Ruijie(config)# **line vty 1 3**

「 ㏿

line vty

```

Ruijie(config)# line vty 0 4
Ruijie(config-line)# password cipher 12345678
Ruijie(config-line)# login
Ruijie(config-line)# transport input telnet
Ruijie(config-line)#
Ruijie(config)# line vty 5 9
Ruijie(config-line)# password cipher 87654321
Ruijie(config-line)# login
Ruijie(config-line)# transport input telnet
Ruijie(config-line)#
Ruijie(config)# line vty 10 19
Ruijie(config-line)# password cipher 12345678
Ruijie(config-line)# login
Ruijie(config-line)# transport input telnet
Ruijie(config-line)#
Ruijie(config)# line vty 20 29
Ruijie(config-line)# password cipher 87654321
Ruijie(config-line)# login
Ruijie(config-line)# transport input telnet
Ruijie(config-line)#
Ruijie(config)# line vty 30 39
Ruijie(config-line)# password cipher 12345678
Ruijie(config-line)# login
Ruijie(config-line)# transport input telnet
Ruijie(config-line)#
Ruijie(config)# line vty 40 49
Ruijie(config-line)# password cipher 87654321
Ruijie(config-line)# login
Ruijie(config-line)# transport input telnet
Ruijie(config-line)#
Ruijie(config)# line vty 50 59
Ruijie(config-line)# password cipher 12345678
Ruijie(config-line)# login
Ruijie(config-line)# transport input telnet
Ruijie(config-line)#
Ruijie(config)# line vty 60 69
Ruijie(config-line)# password cipher 87654321
Ruijie(config-line)# login
Ruijie(config-line)# transport input telnet
Ruijie(config-line)#
Ruijie(config)# line vty 70 79
Ruijie(config-line)# password cipher 12345678
Ruijie(config-line)# login
Ruijie(config-line)# transport input telnet
Ruijie(config-line)#
Ruijie(config)# line vty 80 89
Ruijie(config-line)# password cipher 87654321
Ruijie(config-line)# login
Ruijie(config-line)# transport input telnet
Ruijie(config-line)#
Ruijie(config)# line vty 90 99
Ruijie(config-line)# password cipher 12345678
Ruijie(config-line)# login
Ruijie(config-line)# transport input telnet
Ruijie(config-line)#
Ruijie(config)#

```

transport input

```

Ruijie(config)# transport input telnet
Ruijie(config)#
Ruijie(config)# transport input ssh
Ruijie(config)#
Ruijie(config)# transport input none
Ruijie(config)#
Ruijie(config)# transport input all
Ruijie(config)#
Ruijie(config)# default transport input telnet
Ruijie(config)#

```

Ruijie(config)#

all	Line
ssh	Line SSH
telnet	Line Telnet

none	Line	⏏
------	------	---

「 ㏸

VTY ⏏ TTY
NONE ⏏
default transport input ⏏

「 ㏸

Line

「 ㏸

Line ⏏ VTY
⏏
VTY ⏏ show running Line ⏏

~ 注意:

default transport input ⏏no transport inp
ut LINE ⏏ transpo
rt input none ⏏

「 ㏸

[no] **access-class** *access-list-number* {in | out}

Г А

<i>access-list-number</i>	access-list Ш
in	Ш
out	Ш

Г А

Line Ш

Г А

Line

Г А

Line Ш
Ш **access-class**
access list Ш **show running**
Line Ш

Г А

line vty 0 4 access-list 10

Ruijie# **configure terminal**
Ruijie(config)# **line vty 0 4**
Ruijie(config-line)# **access-class 10 in**

Г А

show running	Ш

Г А

RGOS10.1

	CLI	COPY	W
o	Xmodem	copy xmodem	
o	Tftp	copy tftp	

copy xmodem

	xmodem		xmodem
	W		
	copy flash: filename xmodem		
	copy xmodem flash: filename		
r	A		
	filename		
r	A		
	W		
r	A		
r	A		
	Xmodem	W	W
	Xmodem	4	W
	:	W	
	xmodem		
	xmodem	W	
r	A		
	:		
	Ruijie# copy xmodem flash: config.text		
	Ruijie# copy flash: config.text xmodem		
r	A		

copy tftp

```

        tftp
        山
copy flash: filename tftp:// location / filename
copy tftp:// location/filename flash: filename

r      d
        filename

r      d
        山

r      d

r      d
        山          山
        TFTP        4      山TFTP
        山

r      d
        :          ip 192.168.12. 1
        config.bak ;          switch.bin
        ip 192.168.12.1 :

Ruijie# copy tftp://192.168.12.1/config.bak flash:
config.text
Ruijie# copy flash: swhich.bin tftp://192.168.12.1/

r      d
```

- ping**

W

Г Д

<i>ip-address</i>	IPv4 Ⅲ
<i>length</i>	
<i>times</i>	
timeout	
<i>data</i>	
<i>source</i>	IPv4

Г Д

2 5 100Byte

IP W

Г Д

Г Д

Ping

ping

ping

ping

```

    IP                                5                               100Byte
      .L                             W ping                          q
        ping                        DNS
          ping                      W
            ping                    Dns

Ruijie# ping 192.168.5.1
Sending 5, 100-byte ICMP Echoes to 192.168.5.1, timeout
is 2 seconds:
< press Ctrl+C to break >
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max
= 1/2/10 ms

ping

Ruijie# ping 192.168.5.197 length 1500 ntimes 100 timeout
3 data ffff source 192.168.4.10

Sending 100, 1000-byte ICMP Echoes to 192.168.5.197,
timeout is 3 seconds:
< press Ctrl+C to break >
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip
min/avg/max = 2/2/3 ms
```

```

2      192.168.9.2      0 msec  4 msec  4 msec
3      192.168.110.1    16 msec 12 msec 16 msec
4      * * *
5      61.154.8.129     12 msec 28 msec 12 msec
6      61.154.8.17      8 msec 12 msec 16 msec
7      61.154.8.250     12 msec 12 msec 12 msec
8      218.85.157.222   12 msec 12 msec 12 msec
9      218.85.157.130   16 msec 16 msec 16 msec
10     218.85.157.77    16 msec 48 msec 16 msec
11     202.97.40.65     76 msec 24 msec 24 msec
12     202.97.37.65     32 msec 24 msec 24 msec
13     202.97.38.162    52 msec 52 msec 224 msec
14     202.96.12.38     84 msec 52 msec 52 msec
15     202.106.192.226   88 msec 52 msec 52 msec
16     202.106.192.174   52 msec 52 msec 88 msec
17     210.74.176.158    100 msec 52 msec 84 msec
18     202.108.37.42     48 msec 48 msec 52 msec

```

Ruijie#

```

                                     IP
202.108.37.42                       1 17
      4                               山

```

Ruijie# **traceroute** *www.ietf.org*

TranslatiniT2 1 Tf-0 1 Tf-0.0013 -6(84)Tj/TT4.org 84

Г Д

-
- interface aggregateport
 - interface fastEthernet
 - interface giagbitEthernet
 - interface tenGigabitEthernet
 - interface vlan
 - medium-type
 - descriptioin
 - shutdown
 - speed
 - duplex
 - flowcontrol
 - mtu
 - clear counters
 - clear interface
 - switchport
 - snmp trap link-status
 - line-detect

interface aggregateport

⌘ no ⌘

interface aggregateport *port-number*

Γ Δ

port-number Aggregate port ⌘

Γ Δ

Γ Δ

aggregate port ⌘

aggregate port

aggregate port

show interfaces

show interfaces aggregateport

г

Д

Ruijie(config)# interface aggregateport 3

Ruijie(config-if)#

г

Д

show interfaces		

interface fastEthernet

interface fastEthernet *mod-num/port-num*

г

Д

mod-num/port-num

г

Д

Г Д

Ш

Г Д

Г Д

show interfaces

Ш

Г Д

Ruijie(config)# **interface gigabitethernet 1/1**
Ruijie(config-if)# **description GBIC-1**

Г Д

show interfaces	Ш

shutdown

Ш

no

shutdown

no shutdown

Г Д

Г Д

Ч Ap

Ч SVI

Ш

show interfaces

Ш

Г Д

Ap 1

配置

clear interface	山
show interfaces	山

& 说明:

no shutdown

山

speed

山

no

配置

10	10Mbps	山
100	100Mbps	山
1000	1000Mbps	山
10G	10Gbps	山
auto		山

></A@

d(Tp0 1 7

show interfaces	⏏

duplex

⏏ **no**

duplex {auto | full | half}

no duplex

⌂ ʌ

auto ⏏

full ⏏

half ⏏

⌂ ʌ

⏏

⌂ ʌ

⌂ ʌ

⏏ **show interfaces**

⏏

⌂ ʌ

Ruijie(config-if)# **duplex full**

⌂ ʌ

show interfaces	⏏

flowcontrol

⏏ no

flowcontrol {auto | off | on}

no flowcontrol

г Д

auto
off
on

Ш

г Д

Ш

г Д

г Д

show interfaces Ш

г Д

1/1

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# flowcontrol on

г Д

show interfaces	Ш

mtu

mtu

Mtu num

г Д

num 64 9216(65536)

г Д

1500Ш

г Д

г Д

mtu Ш

「 ㏿

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mtu 9216
```

「 ㏿

show interfaces	㏿

carrier-delay

no carrier-delay ㏿

carrier-delay [seconds]
no carrier-delay

「 ㏿

seconds 1 60

「 ㏿

2 1/1

clear counters [*interface-id*]

Г Д

<i>interface-id</i>	⏏
---------------------	---

Г Д

Г Д

```
show interfaces
```

clear counters ▮

三

Г Д

```
Ruijie# clear counters gigabitethernet 1/1
```

Г Д

show interfaces	⏏

clear interface *interface-id*

Г Д

<i>interface-id</i>	⏏
---------------------	---

Г Д

Г Д

Switch Port,L2 Aggregate port ,Routed port,L3

Aggregate port 33

shutdown no shutdown 

Г Д

```
Ruijie# clear interface gigabitethernet 1/1
```

г д

shutdown	Ш

switchport

2 Ш switchport
3 no switchport
switchport
no switchport

г д

2 Ш

г д

г д

Шswitchport

access	switch port access port
trunk	switch port trunk port

r
 A

switch port access

r
 A

r
 A

switch port access VLAN
 switchport access vlan VLAN
 switch port trunk VLAN
 port VLAN VLAN VLAN trunk
 trunk VLAN switchport

r
 A

Ruijie(config-if)# **switchport mode trunk**

r
 A

switchport access	statics accessport VLAN
switchport trunk	trunkport native VLAN Trunk VLAN

switchport access

access port VLAN
 no VLAN
 switchport access vlan *vlan-id*
 no switchport access vlan

r
 A

vlan-id VLAN ID

r
 A

switch port access VLAN VLAN 1

Г А

Г А

VLAN ID 11
VLAN 11
VLAN ID 11
VLAN 11
trunkport

Г А

```
Ruijie(config)# interface gigabitethernet 1/1  
Ruijie(config-if)# switchport access vlan 2
```

Г А

switchport mode	switch port 11
switchport trunk	trunkport native VLAN 11 Trunk VLAN 11

switchport trunk

trunkport native VLAN Trunk VLAN
11 no trunk 11

```
switchport trunk {allowed vlan {all | [add | remove | except]  
vlan-list }| native vlan vlan-id}  
no switchport trunk {allowed vlan | native vlan}
```

Г А

allowed vlan vlan-list	Trunk VLAN 11 vlan-list VLAN 11 VLAN ID 11 - 11 10-20 11 1-10,20-25,30,33 all VLAN add VLAN VLAN remove VLAN VLAN except VLAN VLAN VLAN

snmp trap link-status

LinkTrap LinkTrap, 三
Link SNMP LinkTrap三
no SNMP

snmp trap link-status
no snmp trap link-status

г А Link SNMP LinkTrap三

г А
г А ЧAp ЧSVI LinkTrap LinkTrap, 三 Link SNMP

г А Link trap:
Ruijie(config)# interface gigabitEthernet 1/1
Ruijie(config-if)# no snmp trap link-status
Link trap:
Ruijie(config)# interface gigabitEthernet 1/1
Ruijie(config-if)# snmp trap link-status

г А

Ruijie(config-if)# snmp trap link-status	link trap .
Ruijie(config-if)# no snmp trap link-status	link trap .

line-detect

line-detect 三
line-detect

г Д

г Д

г Д

line-detect

Ш

г Д

Ruijie(config)#**interface gigabitEthernet 0/1**

Ruijie(config-if-GigabitEthernet 0/1)#**line-detect**

山

length

Aggregate Port

port-group

Aggregate Port 100 no
Aggregate Port 100

port-group *port-group-number*

no port-group

100 100

Aggregate Port

100 100

<i>port-group-number</i>	Aggregate Port Aggregate Port

100 100

100 100

AP 100 VLAN 100 trunk port 100
native VLAN AP

100 100

1/3 AP 3

Ruijie(config)# **interface gigabitethernet 1/3**

Ruijie(config-if)# **port-group 3**

aggregateport load-balance

AP 100 no
100

aggregateport load-balance {dst-mac | src-mac | src-dst-mac }

no aggregateport load-balance



no name

Г Д

<i>vlan-name</i>	VLAN

Г Д

VLAN

Г Д

VLAN

Г Д

show vlan vlan

Г Д

Ruijie(config)# **vlan 10**
 Ruijie(config-vlan)# **name vlan10**

Г Д

show vlan	VLAN Ш

switchport mode

access port trunk port, switch port 802.1Q Ш no
 Ш

switchport mode {access | trunk}

no switchport mode

Г Д

access	switch port access portШ
trunk	switch port trunk portШ

Г Д

switch port access

Г Д

trunkport

r A

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# switchport access vlan 2
```

r A

switchport mode	switch port 山
switchport trunk	trunkport native VLAN Trunk VLAN 山

switchport trunk

trunkport native VLAN Trunk VLAN
山 no trunk 山

```
switchport trunk {allowed vlan { all | [add | remove | except]
vlan-list }| native vlan vlan-id}
no switchport trunk {allowed vlan | native vlan }
```

r A

	Trunk VLAN 山
	vlan-list VLAN
	VLAN ID VLAN ID
	VLAN ID - 山
	10-20山
	1-10,20-25,30,33
allowed vlan vlan-list	all VLAN
	VLAN
	add \$ €

Г Д

Native VLAN

Trunk native VLAN 1 native VLAN 1
 UNTAG VLAN ID IEEE 802.1Q PVID native
 VLAN VLAN ID 1 Trunk native VLAN
 UNTAG 1

VLAN

Trunk VLAN 1 4094 1
 Trunk VLAN VLAN
 Trunk 1

show interfaces switchport 1

Г Д

VLAN 2 1/15

```
Ruijie(config)# interface fastethernet 1/15
Ruijie(config-if)# switchport trunk allowed vlan remove
2
Ruijie(config-if)# end
Ruijie# show interfaces fastethernet1/15 switchport
Switchport is1 TUuSed
Mode is1trunk port
Access vlan is11,Native vlan is11
Protected is1disUuSed
Vlan lists is1
1,3-4094
```

Г Д

show interfaces	1
switchport access	statics accessport VLAN 1

show vlan

VLAN 1

show vlan [**id** *vlan-id*]

r **A**

<i>vlan-id</i>	VLAN ID Ⅲ

MAC

- **mac-address-table aging-time**
- **clear mac-address-table dynamic**
- **clear mac-address-table filtering**
- **clear mac-address-table static**
- **mac-address-table static**
- **mac-address-table filtering**
- **mac-address-table notification**
- **nmp trap mac-notification**
- **address-bind**

mac-address-table aging-time

```

                                [1]          no                      [1]

mac-address-table aging-time seconds

no mac-address-table aging-time

r      A
seconds                                [1]          [1]

r      A
300  [1]

r      A

r      A

show mac-address-table aging-time          [1]

show mac-address-table dynamic            [1]

r      A

Ruijie(config)# mac-address-table aging-time 150
```

Г Д

show mac-address-table aging-time	Ш
show mac-address-table dynamic	Ш

clear mac-address-table dynamic

Ш

clear mac-address-table dynamic[address *mac-addr*] [**interface** *interface-id*] [**vlan** *vlan-id*]

clear mac-address-table filtering

▮

clear mac-address-table filtering [**address** *mac-addr*] [**vlan** *vlan-id*]

┌ ┐

filtering	▮
address <i>mac-addr</i>	▮
vlan <i>vlan-id</i>	VLAN

┌ ┐

┌ ┐

show mac-address-table filtering

┌ ┐

00d0.f800.0c0c

Ruijie# **clear mac-address-table filtering address**
00d0.f800.0c0c

┌ ┐

mac-address-table filtering	▮
show mac-address-table filtering	▮

┌ ┐

clear mac-address-table static

▮

clear mac-address-table static [**address** *mac-addr*] [**interface**
interface-id] [**vlan** *vlan-id*]

┌ ┐

static	▮
address <i>mac-addr</i>	▮
interface <i>interface-id</i>	▮
vlan <i>vlan-id</i>	VLAN ▮

Г Д

Г Д

show mac-address-table static

Г Д

MAC 00d0.f800.073c

Ruijie# **clear mac-address-table static address**
00d0.f800.073c

Г Д

mac-address-table static	▮
show mac-address-table static	▮

mac-address-table static

▮ **no** ▮

mac-address-table static *mac-addr* **vlan** *vlan-id* **interface** *interface-id*

no mac-address-table static *mac-addr* **vlan** *vlan-id* **interface**
interface-id

Г Д

<i>mac-addr</i>	MAC ▮
<i>vlan-id</i>	VLAN ▮
<i>interface-id</i>	(AggregatePort)

[illegible]

<http://www.ruijie.com.cn>

「 ㏿

⌘ **show mac-address-table filtering**
⌘

「 ㏿

Ruijie(config)# **mac-address-table filtering**
00d0f8000000 vlan 1

「 ㏿

clear mac-address-table filtering	⌘
show mac-address-table filtering	⌘

mac-address-table notification

MAC ⌘ **no** ⌘

mac-address-table notification [**interval** *value* | **history-size** *value*]

no mac-address-table notification [**interval** | **history-size**]

「 ㏿

interval <i>value</i>	MAC Trap 1 ⌘
history-size <i>value</i>	MAC 50⌘

「 ㏿

1 50⌘

「 ㏿

「 ㏿

MAC
Trap ⌘ **snmp-server**
enable traps mac-notification MAC Trap
⌘

「 ㏿

```
Ruijie(config)# mac-address-table notification
Ruijie(config)# mac-address-table notification
interval 40
Ruijie(config)# mac-address-table notification
history-size 100
```

Г Д

snmp-server enable traps	trap Ш
show mac-address-table notification	MAC Ш
snmp trap mac-notification	MAC Ш

snmp trap mac-notification

MAC Ш no Ш

```
snmp trap mac-notification {added | removed}
no snmp trap mac-notification {added | removed}
```

Г Д

added	Ш
removed	Ш

Г Д

Ш

Г Д

Г Д

show mac-address-table notification *interface* Ш

Г Д

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# snmp trap mac-notification added
```

Г Д

mac-address-table notification	MAC ㄣ
show mac-address-table notification	MAC ㄣ

- **show mac-address-table address**
- **show mac-address-table aging-time**
- **show mac-address-table count**
- **show mac-address-table dynamic**
- **show mac-address-table filtering**
- **show mac-address-table interface**
- **show mac-address-table notification**
- **show mac-address-table static**
- **show mac-address-table vlan**
- **show address-bind**

show mac-address-table address

MAC

```
Ruijie# show mac-address-table address 00d0.f800.1001
Vlan      MAC Address      Type      Interface
-----
1         00d0.f800.1001    STATIC    Gi1/1
```

Г А

show mac-address-table static	Ш
show mac-address-table filtering	Ш
show mac-address-table dynamic	Ш
show mac-address-table interface	Ш
show mac-address-table vlan	VLAN
show mac-address-table count	Ш
show mac-address-table static	Ш
show mac-address-table filtering	Ш

show mac-address-table aging-time

Ш

show mac-address-table aging-time

Г А

Г А

```
Ruijie# show mac-address-table aging-time
Aging time : 300
```

Г А

mac-address-table aging-time	Ш

show mac-address-table count

▮

show mac-address-table count

└ A

└ A

Ruijie# show mac-address-table count

Dynamic Address Count : 51

Static Address Count : 0

Filter Address Count : 0

Total Mac Addresses : 51

Total Mac Address Space Available: 8139

└ A

show mac-address-table static	▮
show mac-address-table filtering	▮
show mac-address-table dynamic	▮
show mac-address-table address	▮
show mac-address-table interface	▮
show mac-address-table vlan	VLAN ▮

show mac-address-table dynamic

▮

show mac-address-table dynamic [address *mac-addr*] [interface
interface-id] [vlan *vlan-id*]

└ A

<i>mac-addr</i>	MAC ▮
<i>vlan-id</i>	VLAN▮

<i>interface-id</i>	(AggregatePort)
---------------------	------------------

Г Д

Г Д

Г Д

Ruijie# **show mac-address-table dynamic**

Vlan	MAC Address	Type	Interface
----	-----	-----	-----
1	0000.0000.0001	DYNAMIC	gigabitethernet 1/1
1	0001.960c.a740	DYNAMIC	gigabitethernet 1/1
1	0007.95c7.dff9	DYNAMIC	gigabitethernet 1/1
1	0007.95cf.eee0	DYNAMIC	gigabitethernet 1/1
1	0007.95cf.f41f	DYNAMIC	gigabitethernet 1/1
1	0009.b715.d400	DYNAMIC	gigabitethernet 1/1
1	0050.bade.63c4	DYNAMIC	gigabitethernet 1/1

Г Д

clear mac-address-table dynamic	Ш

show mac-address-table filtering

show mac-address-table static [**addr** *mac-addr*] [**vlan** *vlan-id*]

Г Д

<i>mac-addr</i>	MAC Ш
<i>vlan-id</i>	VLANШ

Г Д

Г Д

Ruijie# **show mac-address-table filtering**



MAC

show mac-address-table address

山

Г Д

mac-address-table notification	MAC Ш
snmp trap mac-notification	MAC Ш

show mac-address-table static

Ш

show mac-address-table static [add MAC Dtg Bc HRT \$ F4R E\$ C

show mac-address-table vlan

VLAN 三

show mac-address-table vlan [*vlan-id*]

Г Д

<i>vlan-id</i>	VLAN ID 三

Г Д

Г Д

Ruijie# **show mac-address-table vlan 1**

Vlan	MAC Address	Type	Interface
1	00d0.f800.1001	STATIC	gigabitethernet 1/1
1	00d0.f800.1002	STATIC	gigabitethernet 1/1
1	00d0.f800.1003	STATIC	gigabitethernet 1/1

Г Д

show mac-address-table static	三
show mac-address-table filtering	三
show mac-address-table dynamic	三
show mac-address-table address	三
show mac-address-table interface	三
show mac-address-table count	三

IGMP Snooping

deny

deny

profile

profile

deny

deny

deny

profile

profile

deny

profile

profile

range

profile

profile

deny

permit

224.2.2.2

profile

Ruijie(config)# ip igmp profile 1

Ruijie(config-profile)# range 224.2.2.2

Ruijie(config-profile)# deny

ip igmp profile	profile
range	

permit

profile profile profile permit
profile

permit

г А

Ш

permit	profile

г А

profile deny Ш

г А

profile Ш

г А

profile profile range Ш
profile profile Ш
profile
deny profile permit Ш

г А

224.2.2.2 profile :

```
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)# range 224.2.2.2
Ruijie(config-profile)# permit
```

г А

ip igmp profile	profile
range	


```

ip igmp profile profile-number
no ip igmp profile profile-number

```

```

r      A

```

```

profile-number   profile          1-65535

```

```

r      A

```

```

      W

```

```

r      A

```

```

      W

```

```

r      A

```

```

profile
      W

```

```

r      A

```

```

1 profile profile W

```

```

Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)#

```

```

r      A

```

range	profile
ip igmp snooping filter <i>profile-num</i>	

ip igmp snooping filter

```

profileW no profileW

```

```

ip igmp snooping filter profile-number
no ip igmp snooping filter profile-number

```

```

r      A

```

```

Profile-number   profile

```

```

r      A

```

```

      W

```

```

r      A

```


r

A

vid

vlan id

interface-id

Г Д

igmp snooping Ш

Г Д

Ruijie(config)# **ip igmp snooping vlan 1 mrouter learn pim-dvmrp**

Г Д

ip igmp snooping vlan <i>vid</i> mrouter learn pim-dvmrp	

ip igmp snooping dyn-mr-aging-time

Ш

ip igmp snooping dyn-mr-aging-time *time*
no ip igmp snooping dyn-mr-aging-time

Г Д

time Ш

Г Д

300sШ

Г Д

Ш

Г Д

Ш

Г Д

100s

Ruijie(config)# **ip igmp snooping dyn-mr-aging-time 100**

Г Д

--	--

ip igmp snooping	
------------------	--

ip igmp snooping vlan static interface

```

igmp snooping
IGMP
ip
igmp snooping vlan static interface
no

```

```

ip igmp snooping vlan vid static ip-addr interface interface-id
no ip igmp snooping vlan vid static ip-addr interface interface-id

```

```

r      A
      vid          vlan id
      ip-addr
      interface-id  id
r      A
      W
r      A
      W
r      A
      W
r      A
      W
r      A

```

fast-leave

ip igmp snooping fast-leave enable

no ip igmp snooping fast-leave enable

1 A

1

1 A

disable 1

1 A

1

1 A

fast-leave

- **show ip igmp snooping** [gda-table | interface | mrouter]
- **show ip igmp profile** [*profile-number*]
- **debug igmp**

show ip igmp snooping

igmp snooping Ⅲ

show ip igmp snooping [gda-table | interfaces | mrouter| statistics
[

undebug igmp

г д

ш

г д

EXEC

MSTP

spanning-tree

```

MSTP
└─ no
MSTP
└─ spanning-tree
MSTP
└─ no
   spanning tree

```

```

spanning-tree [ forward-time seconds | hello-time seconds |
max-age seconds ]

```

```

no spanning-tree [forward-time | hello-time | max-age]

```

```

r      A
      forward-time seconds
      hello-time seconds
      max-age seconds
      BPDU
      BPDU
      BPDU

```

```

r      A
      spanning-tree
      BPDU

```

```

r      A
      BPDU

```

```

r      A
      forward-time 4 hello-time 4 max-age
      BPDU
      2*(Hello Time+1.0snd) <= Max-Age Time <= 2*(Forward-Delay -
1.0snd)
      BPDU

```

```

r      A
      spanning-tree

```

Ruijie(config)# **spanning-tree**

BridgeForwardDelay

Ruijie(config)# **spanning-tree forward-time 10**

r **A**

show spanning-tree STP Ⅲ

spanning-tree mst cost STP PathCostⅢ

spanning-tree tx-hold-count STP TxHoldCount Ⅲ

spanning-tree bpdufilter

BPDU filter Ⅲ enabled
disabled BPDU filter Ⅲ

spanning-tree bpdufilter [enabled | disabled]

r **A**

enabled BPDU filter Ⅲ

Disabled

spanning-tree bpduguard [enabled | disabled]

「 ㏿

enabled BPDU Guard ㏿

disabled BPDU Guard ㏿

「 ㏿

㏿

「 ㏿

㏿

「 ㏿

Ruijie(config)# **interface gigabitethernet 1/1**

Ruijie(config-if)# **spanning-tree bpduguard enable**

「 ㏿

show spanning-tree interface STP ㏿

spanning-tree link-type

“ ”㏿ no

㏿

spanning-tree link-type [point-to-point | shared]**no spanning-tree link-type**

「 ㏿

pointit-to-point point-to-point.

Shared shared

「 ㏿

point-to-point

shared

「 ㏿

㏿

「 ㏿

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree link-type
point-to-point
```

```
└─┬─┐
  A
```

```
show spanning-tree interface STP
```

spanning-tree max-hops

Count	BPDU	BPDU	Region	Max-hops
Instance	Instance	no		

```
spanning-tree max-hops hop-count
```

```
no spanning-tree max-hops
```

```
└─┬─┐
  A
```

```
hop-count BPDU 1 40
```

```
└─┬─┐
  A
```

```
hop-count 20
```

```
└─┬─┐
  A
```

```
└─┬─┐
  A
```

Region	Root Bridge	BPDU	Hot Count
Root Bridge	Hop Count	1	0
BPDU	Hops	0	BPDU
max-hops	Instance		

```
└─┬─┐
  A
```

```
MST Instance Max-hops 10
```

```
Ruijie(config)# spanning-tree max-hops 10
```

```
show spanning-tree mst
```

```
└─┬─┐
  A
```

```
show spanning-tree MSTP
```


MSTP

Г Д

.

Г Д

end

```
Ruijie(config)#
      VLAN 3 Instance 1 MST
```

```
Ruijie(config-mst)# no instance 1 vlan 3
      Instance 1
```

```
Ruijie(config-mst)# no instance 1
      MST show
```

└─┬─┘

```
show spanning-tree mst MST region
instance instance-id vlan vlan-range Vlan MST Instance
```

```
name MST
revision MST
show MST MST
```

spanning-tree mst cost

```
Instance no

```

```
spanning-tree [mst instance-id] cost cost
no spanning-tree [mst instance-id] cost
```

└─┬─┘

```
instance-id Instance 0 64
cost 1 200 000 000
```

└─┬─┘

```
Instance-ID 0
Interface
```

┌ ┐

cost

┌ ┐

Instance 3

400

Ruijie(config)# **interface gigabitethernet 1/1**

Ruijie(config-if)# **spanning-tree mst 3 cost 400**

Region W

```

Instance 20      Gigabitethernet 1/1
10
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree mst 20 port-priority
0

```

show spanning-tree mst instance *interface interface-id*

show spanning-tree mst	MSTP	U
spanning-tree mst cost		
spanning-tree mst priority	Instance	

spanning-tree mst priority

Instance $\sqcup$ no
 $\sqcup$

spanning-tree [*mst instance-id*] **priority** *priority*no spanning-tree [mst *instance-id*] priority

<i>instance-id</i>	Instance	0	64
<i>priority</i>		0,	4096,8192, 12288, 16384, 20480, 24576, 28672, 32768, 36864, 40960, 45056, 49152,53248, 57344 61440
<i>id</i>	16	4096	

```
instance-id      0
priority        32768
```

•

Г Д

Instance 20

8192

```

r      d
      show spanning-tree      MSTP      11

```

```

r      A
      show spanning-tree interface STP  3

```



```

Ruijie(config)# spanning-tree bpduguard
error-disabled
Ruijie(config)# show spanning-tree

```

```

Ruijie(config)# spanning-tree portfast bpduguard
default

```

```

Ruijie(config)# show spanning-tree interface
STP

```

spanning-tree portfast bpduguard default

```

Ruijie(config)# spanning-tree bpduguard
filter
Ruijie(config)# spanning-tree portfast bpduguard
default
Ruijie(config)# no spanning-tree portfast bpduguard
default

```

```

Ruijie(config)# spanning-tree

```

```

Ruijie(config)# spanning-tree
BPDU filter

```

```

Ruijie(config)# spanning-tree

```

```

Ruijie(config)# spanning-tree
BPDU Filter
show spanning-tree

```

```

Ruijie(config)# spanning-tree portfast bpduguard
default

```

```

Ruijie(config)# show spanning-tree interface
STP

```

spanning-tree portfast default

```
Portfast Portfast  111 no
Portfast  111
```

spanning-tree portfast default

no spanning-tree portfast default

```
1 1 1
```

```
111
```

```
1 1 1
```

```
Portfast  111
```

```
1 1 1
```

```
111
```

```
1 1 1
```

```
Ruijie(config)# spanning-tree portfast default
```

```
1 1 1
```

```
show spanning-tree interface STP 111
```

spanning-tree tc-protection tc-guard

```
tc- guard 111 no tc- guard
111 tc-guard tc 111
```

spanning-tree tc-protection tc-guard

Ruijie

Ruijie(config)# **spanning-tree tc-protection tc-guard**

spanning-tree tc-guard

tc-guard ☐ no tc-guard ☐
tc-guard ☐ tc ☐

spanning-tree tc-guard

no spanning-tree tc-guard

Ruijie

☐

Ruijie

tc-guard ☐

Ruijie

☐

Ruijie

Ruijie(config-if)# **spanning-tree tc-guard**

spanning-tree guard root

root guard ☐ no root guard ☐
root guard ☐
☐

spanning-tree guard root

no spanning-tree guard root

Ruijie

☐

Ruijie

root guard ☐

Ruijie

☐

「 ㏿

Ruijie(config-if)# **spanning-tree guard root**

spanning-tree loopguard default

loop guard	㏿	no	loop guard	㏿
loop guard			bpdu	
㏿				

spanning-tree loopguard default

no spanning-tree loopguard default

「 ㏿

loop guard

Ш

Г Д

「 A

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree autoedge disabled
```

「 A

```
show spanning-tree interface          STP      ㄣ
```

bpdu src-mac-check

```
          bpdu  mac      ㄣ      no
bpdu  mac      ㄣ
```

```
bpdu src-mac-check H.H.H
```

```
no bpdu src-mac-check
```

「 A

```
H.H.H          mac          bpdu  ㄣ
no          bpdu  ㄣ
```

「 A

ㄣ

「 A

ㄣ

「 A

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# bpdu src-mac-check 00d0.f800.1e2f
```

「 A

clear spanning-tree detected-protocols

```
RSTP BPDU      BPDU      ㄣ
```

```
clear spanning-tree detected-protocols [interface interface-id]
```

「 A

```
interface-id
```

└───┐
└───┐

└───┐

└───┐
└───┐

└───┐
└───┐

Ruijie# **clear spanning-tree detected-protocols**

└───┐
└───┐

show spanning-tree interface STP └───┐

spanning-tree compatible enable

MSTI

└───┐

spanning-tree compatible enable

no spanning-tree compatible enable

└───┐
└───┐

└───┐
└───┐

└───┐
└───┐

└───┐
└───┐

Ruijie(config-if)#**spanning-tree compatible enable**

└───┐
└───┐

show spanning-tree

▮

```
show spanning-tree [summary | forward-time | hello-time |  
max-age | inconsistentports] tx-hold-count | pathcost method |  
max_hops]
```

┌

└

```
summary          MSTP      instance          ▮  
Inconsistentports
```

show spanning-tree interface

STP 三 三

show spanning-tree interface *interface-id* [{**bpdufilter** | **portfast** | **bpduguard** | **link-type** }]

Г Д

interface-id

bpdufilter bpdufilter 三

portfast portfast 三

bpduguard bpduguard 三

link-type linktype

Г Д

三

Г Д

Ruijie# **show spanning-tree interface gigabitethernet 1/5**

Г Д

spanning-tree bpdufilter BPDU filter 三

spanning-tree portfast portfast 三

spanning-tree bpduguard BPDU guard 三

spanning-tree link-type

Г

А

InstanceШ

SPAN

monitor session

SPAN

no



monitor session *session_number* {**source interface** *interface-id* [**both** | **rx** | **tx**] | **destination interface** *interface-id* { **encapsulation** | **switch** } | **mac** {**source** *mac-addr* | **destination** *mac-addr* } [**both** | **rx** | **tx**]}

no monitor session *session_number* [**source interface** *interface-id* [**both** | **rx** | **tx**] | **destination interface** *interface-id* { **encapsulation** | **switch** }] | **mac** {**source** *mac-addr* | **destination** *mac-addr* } [**both** | **rx** | **tx**]

no monitor session all

r

A

<i>session_number</i>	SPAN 
source interface <i>interface-id</i>	 <i>interface-id</i> AP SVI 
destination interface <i>interface-id</i>	 <i>interface-id</i> AP SVI 
mac source <i>mac-addr</i>	MAC
mac destination <i>mac-addr</i>	MAC
both	
rx	
tx	
all	
encapsulation	, tag
switch	

Г Д

Г Д

switch port routed port Ш SPAN Ш SPAN
 port SPAN Ш disabled Ш

Ш

Ш

show monitor

SPAN

Ш

Г Д

SPAN

1.

1

1

8

Ruijie(config)# **no monitor session 1**

Ruijie(config)# **monitor session 1 source interface**
gigabitEthernet 1/1 both

Ruijie(config)# **monitor session 1 destination interface**
gigabitEthernet 1/8

Г Д

--	--

Г Д

show monitor

SPAN 1

```
Ruijie# show monitor session 1
sess-num: 1
src-intf:
GigabitEthernet 3/1 frame-type Both
dest-intf:
GigabitEthernet 3/8
```

Г Д

monitor session	SPAN Ш

IP

° ip address

ip address

IP no IP
Ш

ip address *ip-address network-mask*

no ip address *ip-address network-mask*

г д

<i>ip-address</i>	32	IP	8 Ш
<i>network-mask</i>	32	Ш 8 Ш	"1" "0"

г д

IP Ш

г д

г д

IP IP IP
IP IP Ш IP
32 IP
Ш IP
1 1 Ш
0 0 IP Ш
A 255.0.0.0 Ш

IP

Ш

г Д

IP 10.10.10.1

255.255.255.0Ш

ip address 10.10.10.1 255.255.255.0

г Д

show interface	

г Д

IP

secondary

arp

d4¢"0P4bI88

Ш

G0

ARP

IP

MAC

IP

Г

А

RGOS

ARP

32

IP

48

IP

г д

ARP

30s

arp retry interval 30

г д

Arp retry times <i>number</i>	ARP

arp retry times

arp

IP

ARP

Ш

no

5 ARP Ш

arp retry times *number*

no arp retry times

г д

<i>number</i>	ARP <1-100>Ш 1 ARP 1 ARP

г д

ARP

ARP

5

Ш

г д

г д

ARP

ARP

Ш

г д

ARP

Ш

arp retry times 1

ARP

1 Ш

arp retry times 2

IP

г Д

arp retry interval seconds	arp

arp trusted NUM

ARP Ш no

Ш

arp trusted number

no arp trusted

г Д



number	ARP , <10-4096>Ш

г Д

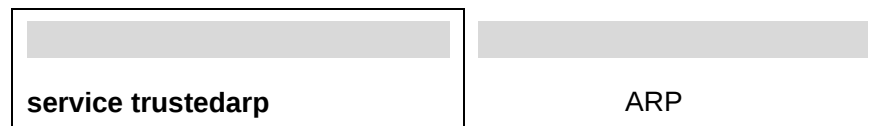
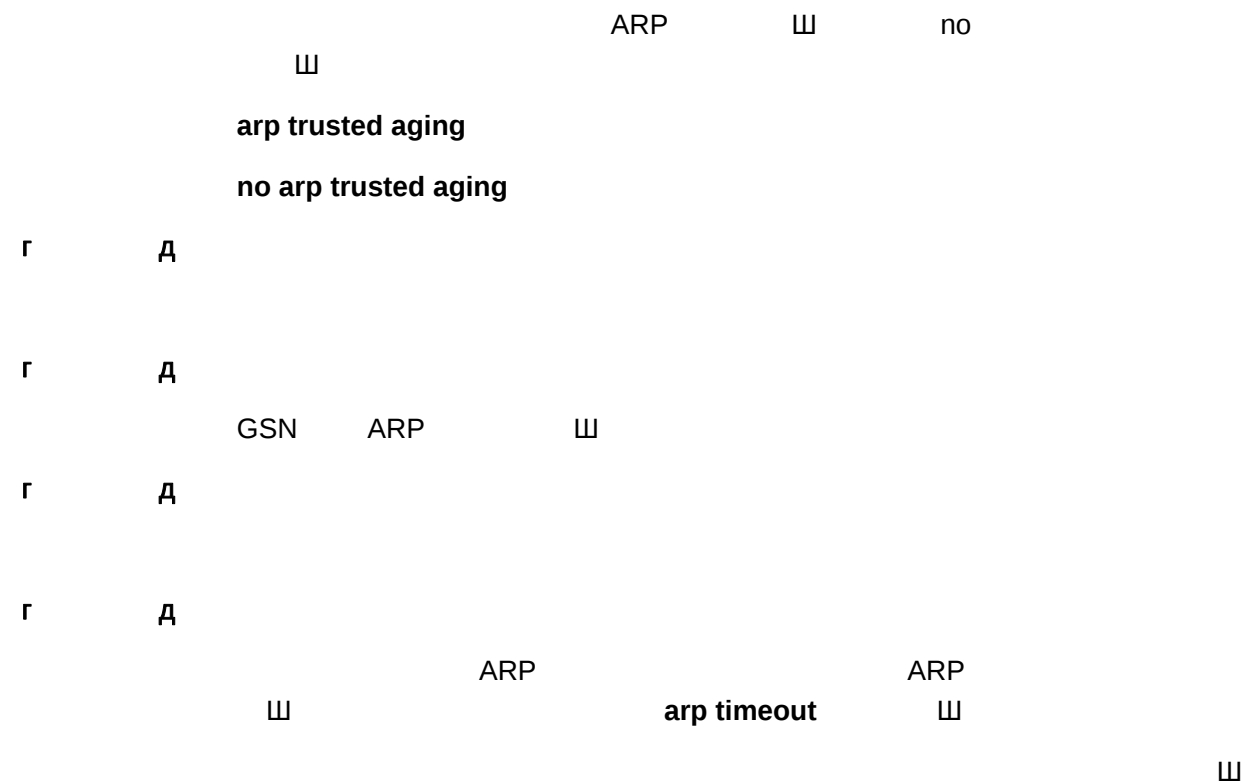
Ш

г Д

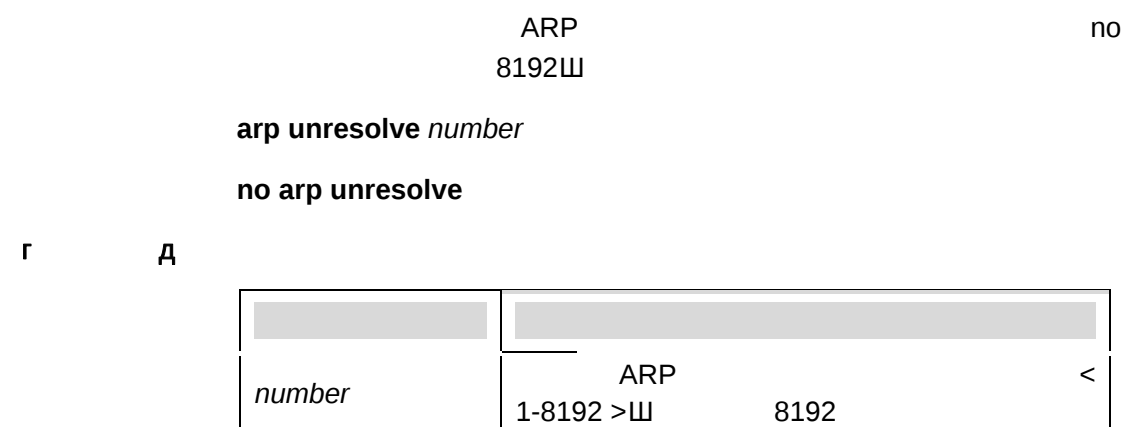
г Д

ARP 701/042d11fARCD17/TT1 Td8/T

arp trusted aging



arp unresolve



IP

SVI 1



<i>Interface-type</i>	
<i>Interface-number</i>	

г д

г д

RGOS
RGOS
RGOS
Ш

г UP Л

г UP Л Ш

Ш

г д

show ip interface Ш

```
Ruijie# show ip interface FastEthernet 0/1
IP interface state is: UP
IP interface type is: BROADCAST
IP interface metric is: 0
IP interface MTU is: 1500
IP address is:
192.168.5.133/24 (primary)
IP address negotiate is: OFF
Forward direct-boardcast is: ON
ICMP mask reply is: ON
Send ICMP redirect is: ON
```

IP interface state is:	"UP"
IP interface type is:	
IP interface MTU is:	MTU
IP address is:	IP
IP address negotiate is:	IP
Forward direct-boardcast is:	
ICMP mask reply is:	ICMP
Send ICMP redirect is:	ICMP
Send ICMP unreachable is:	ICMP
DHCP relay is:	DHCP
Fast switch is:	IP
Route horizontal-split is:	
Help address is:	helper IP
Proxy ARP is:	ARP
Outgoing access list is	
Inbound access list is	

show ip redirects

山

show ip redirects

г А

山

г А

г А

山

г А

show ip redirects 山

Ruijie# show ip redirects

Default Gateway: 192.168.195.1

Г А

ip default-gateway	Ш

Г Г Q Д

Ä

ip default-gateway

ip default-gatewayШ

1

no

2

ip name-server *ip-address*

no ip name-server [*ip-address*]

3

<i>ip-address</i>	IP

4

5

6

DNS Server IP 1
 DNS Server 2
 Server DNS 3
 6 4
 ip-address 5
 6 DNS Server 7
 DNS

8

Ruijie(config)# **ip name-server** 192.168.5.134

9

show hosts	DNS 1

└─┬─

-IP

└─┬─

clear host *

└─┬─

show hosts	

└─┬─

RGNOS10.1 └─┬─

show hosts

DNS └─┬─

show hosts

└─┬─

└─┬─

DNS └─┬─

└─┬─

```
Ruijie# show hosts
Name servers are:
static
host          type      address
switch        static    192.168.5.243
www.ruijie.com dynamic   192.168.5.123
```

└─┬─

ip host	IP
ip name-server	DNS

└─┬─

RGNOS10.1 └─┬─

SNTP

- **sntp enable**
- **sntp server**
- **sntp interval**

sntp enable

SNTP **no**
—Disable

[no] **sntp enable**

└─A

└─A

SNTP Disable

└─A

└─A

show sntp SNTP

└─A

RedGiant(config)# **sntp enable**

└─A

show sntp	SNTP
clock update-calendar	
clock set	

└─A

RGOS10.0

sntp server

Server SNTP Server SNTP NTP
 internet

sntp enable	SNTP
show sntp	SNTP
clock update-calendar	

Г Д

```
RedGiant# show sntp
SNTP state           : Enable
SNTP server          : 192.168.4.12
SNTP sync interval   : 60
Time zone            : +8
```

Г Д

sntp enable	SNTP
show sntp	SNTP

Г Д

RGOS10.0

NTP

ntp server	NTP

ntp authenticate

NTP

NTP

ntp authentication-key

NTP

NTP

山

ntp disable

```

# 关闭NTP
ntp disable

# 查看NTP是否关闭
show ntp

# 关闭NTP
ntp disable

# 查看NTP是否关闭
show ntp

# 关闭NTP
ntp disable

# 查看NTP是否关闭
show ntp

# 关闭NTP
ntp disable

# 查看NTP是否关闭
show ntp
```

~ 注意:

```

# 关闭NTP
ntp disable

# 查看NTP是否关闭
show ntp

# 关闭NTP
ntp disable

# 查看NTP是否关闭
show ntp

# 关闭NTP
ntp disable

# 查看NTP是否关闭
show ntp
```

ntp server

```

# 配置NTP服务器
ntp server ip-addr [ version version ] [ source if-name ] [ key
keyid ][prefer]version
```

<i>version</i>	NTP 1-3 NTPv3
<i>if-name</i>	NTP
<i>keyid</i>	
prefer	Prefer

配置命令

NTP 配置

配置命令

配置

配置命令

20 配置

prefer

NTP
IP

NTP

配置

配置命令

NTP server配置

ntp server 192.168.210.222

配置命令

no ntp	NTP 配置

ntp synchronize

NTP

ntp synchronize

no ntp synchronize

配置命令

Ш

г А

Ш

г А

f

Г Д

Ш

```
ntp authentication-key 6 md5 woooooop
ntp trusted-key 6
ntp server 192.168.210.222 key 6
```

Г Д

ntp authenticate	Ш
ntp authentication-key	NTP Ш
ntp server	NTP Ш

- debug ntp
- show ntp status

debug ntp

NTP Ш

debug ntp

no debug ntp

Г Д

Ш

Г Д

Ш

Г Д

Ш

Г Д

NTP

Ш

Г Д

NTP

```
debug ntp
```

```
г      д
```

```
Ш
```

show ntp status

```
      NTP      Ш
```

```
show ntp status
```

```
г      д
```

```
Ш
```

```
г      д
```

```
Ш
```

```
г      д
```

```
г      д
```

```
      NTP
```

```
      NTP
```

```
      Ш
```

```
г      д
```

```
      NTP      Ш
```

```
show ntp status
```

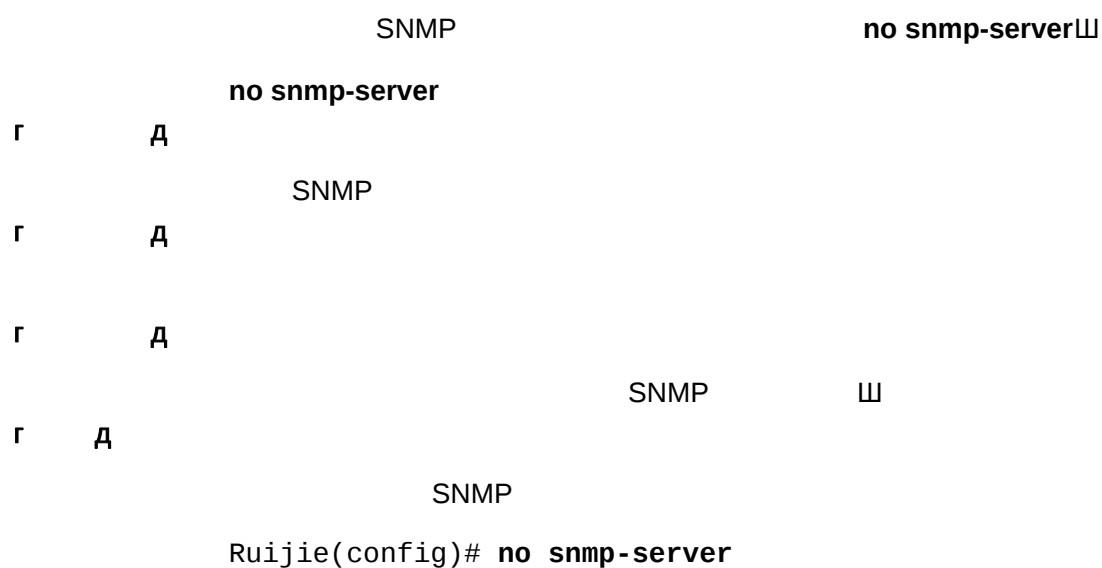
```
г      д
```

SNMP

SNMP

- **no snmp-server**
- **show snmp**
- **snmp-server chassis-id**
- **snmp-server community**
- **snmp-server contact**
- **snmp-server enable traps**
- **snmp-server host**
- **snmp-server location**
- **snmp-server packet-size**
- **snmp-server queue-length**
- **snmp-server system-shutdown**
- **snmp-server trap-source**
- **snmp-server trap-timeout**

no snmp-server



snmp-server chassis-id

```

SNMP
chassis-id 60FF60
no snmp-server chassis-id
snmp-server chassis-id 123456
no snmp-server chassis-id
Ruijie(config)# snmp-server chassis-id 123456

```

show snmp	SNMP

snmp-server community

```

SNMP
community 123456
no snmp-server community
snmp-server community string [view view-name] [[ro | rw] [host ipaddr] [ number ]
no snmp-server community string
Ruijie(config)# snmp-server community string NMS SNMP
snmp-server community string view-name

```

```

ro          NMS  MIB                               1
rw          NMS  MIB                               1
number      0-99
MIB         NMS                               1
ipaddr      NMS                               MIB  NMS  1

r          A

r          A

r          A

SNMP
ч          MIB  NMS                               1
SNMP          no snmp-server                               1

r          A

MIB
192.168.12.1  NMS  MIB
Ruijie(config)# access-list 2 permit 192.168.12.1
Ruijie(config)# access-list 2 deny any
Ruijie(config)# snmp-server community public ro 2

```

r A

access-list	

snmp-server contact

```

SNMP
contact 1 no SNMP snmp-server 1
snmp-server contact text
no snmp-server contact

r          A

text

r          A

```

1

Ruijie

Ruijie

SNMP

i-net800@i-net.com.cn

Ruijie(config)# **snmp-server contact** *i-net800@i-net.com.cn*

Ruijie

SNMP

NMS

Trap

snmp-server enable traps

snmp-server enable traps

no SNMP NMS Trap

snmp-server enable traps [snmp]

no snmp-server enable traps

Ruijie

snmp SNMP

Ruijie

Ruijie

Ruijie

snmp-server

1

Ruijie

SNMP

Ruijie(config)# **snmp-server enable traps snmp**

Ruijie(config)# **snmp-server host public 10.2.2.19**

show snmp-server

SNMP

<http://www.ruijie.com.cn>

snmp

Г Д

	АБ ВГ
snmp-server host	SNMP

snmp-server host

snmp-server host SNMP NMS
no SNMP Ш

snmp-server host *host-addr*

SNMP

SNMP

```
Ruijie(config)# snmp-server host 192.168.12.219 public  
snmp
```

Г А

no snmp-server packetsize

Г Д

byte-count 484 17876 Ш

Г Д

1500

Г Д

Г Д

SNMP 1492

Ruijie(config)# **snmp-server packetsize 1492**

Г Д

snmp-server queue-length	SNMP

snmp-server queue-length

snmp-server

queue-lengthШ

snmp-server queue-length *length*

Г Д

length 1 1000Ш

Г Д

10

Г Д

Г Д

Ш

4 Ш

Г Д

4

```
Ruijie(config)# snmp-server queue-length 4
```



```
md5 authpassstr priv des56 despassstr
```

Г Д

show snmp user	SNMP

snmp-server group

SNMP SNMP-server group

no

```
snmp-server group groupname {v1 | v2c | v3 {auth | noauth | priv}}
[read readview][write writeview] [access {num | name}]
```

```
no snmp-server group groupname {v1 | v2c | v3 }
```

Г Д

```
v1 | v2c | v3 /TTL (SNMP) /CZ_0050722C18382060 /J0747362800D430298019E /09280362300
```

show snmp group	SNMP

snmp-server view

```

SNMP
no snmp-server view
snmp-server view view-name oid-tree {include | exclude}
no snmp-server view view-name [oid-tree]

view-name
oid-tree MIB MIB
include MIB
exclude MIB


```

Г А

Г А

show snmp SNMP
show snmp mib snmp mib
show snmp user snmp
show snmp view snmp
show snmp group snmp

Г А

SNMP

```
Ruijie# show snmp
Chassis: 60FF60
0 SNMP packets input
0 Bad SNMP version errors
0 Unknown community name
0 Illegal operation for community name supplied
0 Encoding errors
0 Number of requested variables
0 Number of altered variables
0 Get-request PDUs
0 Get-next PDUs
0 Set-request PDUs
0 SNMP packets output
0 Too big errors (Maximum packet size 1500)
0 No such name errors
0 Bad values errors
0 General errors
0 Response PDUs
0 Trap PDUs
SNMP global trap: disabled
SNMP logging: disabled
SNMP agent: enabled
```

Г А

snmp-server <i>chassis-id</i>	SNMP

RMON

RMON

- **rmon collection stats** *index* [**owner** *owner-string*]
- **rmon collection history** *index* [**owner** *owner-string*] [**buckets** *bucket-number*] [**interval** *seconds*]
- **rmon alarm** *number variable interval* {**absolute** | **delta** }
rising-threshold *value* [*event-number*]

Ruijie(config-if)# **rmon collection stats 1 zhansan**

┌ ▯

rmon collection history <i>index [owner owner-name]</i> buckets <i>bucket-number</i> interval <i>seconds</i>	

rmon collection history

▮ no ▮

rmon collection history *index [owner ownername] [buckets*
bucket-number] [interval seconds]
no rmon collection history *index*

┌ ▯

┌ ▯

┌ ▯ owner 4 buckets interval
RGOS

┌ ▯

1 ▮

Ruijie(config)# **interface fast-Ethernet 0/1**
Ruijie(config-if)# **rmon collection history 1 zhansan**
buckets 10 interval 10

┌ ▯

rmon collection stats <i>index</i> <i>[owner owner-name]</i>	

Г Д

Г Д

Г Д

4 trap Ⅲ

Ruijie(config)# **rmon event 1 log trap rmon description**
"ifInNUcastPkts is too much " owner zhangsan

Г Д

--	--

rmon alarm *number variable interval*
{absolute | delta } rising-threshold *value*
[event-number] falling-threshold value
[event-number] [owner ownername]

```

Octets : 1884085
Pkts : 3096
BroadcastPkts : 161
MulticastPkts : 97
CRCAlignErrors : 0
UndersizePkts : 0
OversizePkts : 1200
Fragments : 0
Jabbers : 0
Collisions : 0
Pkts64Octets : 128
Pkts65to127Octets : 336
Pkts128to255Octets : 229
Pkts256to511Octets : 3
Pkts512to1023Octets : 0
Pkts1024to1518Octets : 1200
Owner : zhangsan
    
```

Г Д

rmon collection stats <i>index</i> [owner owner-string]	

show rmon history

Ш

show rmon history

Г Д

Г Д

Г Д

Г Д

```

Ruijie# show rmon history
Entry : 1
Data source : Gi1/1
Buckets requested : 65535
    
```

Buckets granted : 10
Interval : 1
Owner : zhangsan
Sample : 198
Interval start : 0d:0h:15m:0s
DropEvents : 0
Octets : 67988
Pkts : 726
BroadcastPkts : 502
MulticastPkts : 189
CRCAlignErrors : 0
UndersizePkts : 0
OversizePkts : 0
Fragments : 0
Jabbers : 0
Collisions : 0
Utilization : 0

Г А

rmon collection history <i>index</i> [owner <i>ownername</i>] [buckets <i>bucket-number</i>] [interval <i>seconds</i>]	

show rmon alarm

Ш

show rmon alarm

Г А

Г А

Г А

Г А

Ruijie# show rmon alarm
Event : 1

Description : firstevent
 Event type : log-and-trap
 Community : public
 Last time sent : 0d:0h:0m:0s
 Owner : zhangsan
 Log : 1
 Log time : 0d:0h:37m:47s
 Log description : ipttl
 Log : 2
 Log time : 0d:0h:38m:56s
 Log description : ipttl

r A

Rising threshold : 10
Falling threshold : 22
Rising event : 0
Falling event : 0
Owner : zhangsan

r **A**

rmon event <i>number</i> [log] [trap <i>community</i>] [<i>description-string</i>]	

-
- **storm-control**
 - **switchport protected**
 - **switchport port-security**
 - **switchport port-security aging**
 - **switchport port-security mac-address**
 - **port-security arp-check**

storm-control

⏏ ⏏ no

⏏

storm-control {**broadcast** | **multicast** | **unicast**} [{**level** *percent* | **pps** *packets* | *rate-bps*}]

no storm-control {**broadcast** | **multicast**

Г Д

Gigabitethernet 1/1
shutdown

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# switchport port-security
Ruijie(config-if)# switchport port-security
violation shutdown
```

Г Д

show port-security	⏚

switchport port-security aging

W

no

W

switchport port-security aging {static | time time }
no switchport port-security aging {static | time }

Г Д

--	--

Static

三

time time

```

no switchport port-security aging
time
port-security aging static
    11

show port-security

```

Г А

```

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# switchport port-security aging time
8
Ruijie(config-if)# switchport port-security aging
static

```

Г А

show port-security	11

switchport port-security mac-address

```

11 no
11

```

```

switchport port-security [mac-address mac-address] [maximum
value]

```

```

no switchport port-security [ mac-address mac-address ] |
[maximum]

```

Г А

mac-address mac-address	11
maximum value	11

Г А

Г А

Г А

802.1x

IP

IP

Г Д

gigabitethernet 1/1

00d0.f800.073c

Ruijie# **configure terminal**

Ruijie(config)# **interface gigabitethernet 1/1**

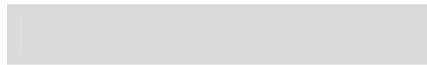
Ruijie(config-if)# **switchport mode access**

Ruijie(config-if)# **switchport port-security**

Ruijie(config-if)# **switchport port-security**

mac-address 00d0.f800.073c

Г Д



```

Interface Broadcast Control Multicast Control Unicast
Control
-----
Gi1/1 Disabled Disabled Disabled

```

```

r      A

```

storm-control	W

show port-security

W

```
show port-security [address] [interface interface-id]
```

```

r      A

```



switchport port-security aging	W
switchport port-security mac-address	W

802.1X

dot1x

dot1x

- **dot1x auto-req**
- **dot1x auto-req p**

Packet-Num : 0
Req-Interval: 30 Second

Г А

show dot1x auto-req	

dot1x auto-req packet-num

no

dot1x auto-req packet-num *num*
no dot1x auto-req packet-num

Г А

num

Г А

num = 0;

Г А

Ш

Г А

show dot1x

auto-req

Г А

802.1x

Ruijie# **configure terminal**
Ruijie(config)# **dot1x auto-req packet-num 0**
Ruijie(config)# **end**
Ruijie# **show dot1x auto-req**

Auto-Req: Enabled
User-Detect : Enabled
Packet-Num : 0
Req-Interval: 30 Second

Г А

--	--

show dot1x auto-req	
---------------------	--

dot1x auto-req req-interval

no

dot1x auto-req req-interval *interval*

no dot1x auto-req req-interval

dot1x auto-req user-detect

no

dot1x auto-req user-detect

no dot1x auto-req user-detect

└ A

⏏

└ A

└ A

⏏

└ A

show dot1x auto-req

└ A

Ruijie# **configure terminal**

Ruijie(config)# **dot1x auto-req user-detect**

Ruijie(config)# **end**

Ruijie# **show dot1x auto-req**

Auto-Req: Enabled

User-Detect : Enabled

Packet-Num : 0

Req-Interval: 60 Second

└ A

show dot1x auto-req	

dot1x

dot1x

- **dot1x timeout quiet-period**

- **dot1x timeout re-authperiod**
- **dot1x timeout server-timeout**
- **dot1x timeout supp-timeout**
- **dot1x timeout tx-period**

dot1x timeout quiet-period

```

                                [1]          no
dot1x timeout quiet-period seconds
no dot1x timeout quiet-period

r      A
seconds                                [1]
      0  65535[1]  s

r      A
      10  [1]

r      A
      [1]

r      A
                                [1]

show dot1x                                [1]

r      A
                                1000s

Ruijie# configure terminal
Ruijie(config)# dot1x timeout quiet-period 1000
Ruijie(config)#
```

Re-authen Max: 3 times
Maximum Request: 3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
Eapol Tag Enable: Disabled
Authorization Mode: Group Server

┌ ▽

show dot1x	802.1x

dot1x timeout re-authperiod

▮ no

Re-authen Period: 1000 sec
Quiet Timer Period: 1000 sec
Tx Timer Period: 3 sec
Supplicant Timeout: 3 sec
Server Timeout: 5 sec
Re-authen Max: 3 times
Maximum Request: 3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
Eapol Tag Enable: Disabled
Authorization Mode: Group Server

r A

show dot1x	802.1x

dot1x timeout server-timeout

```

802.1X Status:      Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled:  Disabled
Re-authen Period:   1000 sec
Quiet Timer Period: 1000 sec
Tx Timer Period:     3 sec
Supplicant Timeout:  3 sec
Server Timeout:      10 sec
Re-authen Max:       3 times
Maximum Request:     3 times
Filter Non-RG Supp:  Disabled
Client Oline Probe:  Disabled
Eapol Tag Enable:    Disabled
Authorization Mode:   Group Server

```

```

r      A

```

show dot1x	802.1x

dot1x timeout supp-timeout

```

      W      no

```

```

      W

```

```

dot1x timeout supp-timeout seconds
no dot1x timeout supp-timeout

```

```

r      A

```

```

seconds                                0
65535W

```

```

r      A

```

```

      3  W

```

```

r      A

```

```

      W

```

```

r      A

```

```

      show dot1x      W

```

```

r      A

```

10s

```

Ruijie# configure terminal
Ruijie(config)# dot1x timeout supp-timeout 10
Ruijie(config)# end
Ruijie# show dot1x

```

```

802.1X Status:      Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled:  Disabled
Re-authen Period:   1000 sec
Quiet Timer Period: 1000 sec
Tx Timer Period:     3 sec
Supplicant Timeout: 10 sec
Server Timeout:      10 sec
Re-authen Max:       3 times
Maximum Request:     3 times
Filter Non-RG Supp:  Disabled
Client Oline Probe:  Disabled
Eapol Tag Enable:    Disabled
Authorization Mode:   Group Server

```

└─┬─

show dot1x	802.1x

dot1x timeout tx-period

┌───┐ no ───┐

```

dot1x timeout tx-period seconds
no dot1x timeout tx-period

```

└─┬─

```

seconds ┌───┐ 0 65535┐

```

└─┬─

3 ┌───┐

└─┬─

┌───┐

Г Д

show dot1x

Ш

Г Д

10s

```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout tx-period 10
Ruijie(config)# end
Ruijie# show dot1x
```

```
802.1X Status:      Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled:  Disabled
Re-authen Period:   1000 sec
Quiet Timer Period: 1000 sec
Tx Timer Period:    10 sec
Supplicant Timeout: 10 sec
Server Timeout:     10 sec
Re-authen Max:       3 times
Maximum Request:     3 times
Filter Non-RG Supp:  Disabled
Client Oline Probe:  Disabled
Eapol Tag Enable:    Disabled
Authorization Mode:   Group Server
```

Г Д

show dot1x	802.1x

dot1x

- **dot1x re-authentication**
- **dot1x reauth-max**

dot1x re-authentication

Ш

no

Ш

[no] dot1x re-authentication

┌ ┐

┌

┌ ┐

┌

┌ ┐

┌

┌ ┐

┌

show dot1x

┌

┌ ┐

Ruijie# **configure terminal**

Ruijie(config)# **dot1x re-authentication**

Ruijie(config)# **end**

Ruijie# **show dot1x**

802.1X Status: Enabled

Authentication Mode: EAP-MD5

Authed User Number: 0

Re-authen Enabled: Enabled

dot1x reauth-max

```

Ruijie# dot1x reauth-max count
Ruijie# no dot1x reauth-max

Ruijie# dot1x reauth-max count
Ruijie# dot1x reauth-max 3
Ruijie# dot1x reauth-max
Ruijie# show dot1x

Ruijie# show dot1x

```

```

Ruijie# configure terminal
Ruijie(config)# dot1x reauth-max 5
Ruijie(config)# end
Ruijie# show dot1x

```

```

802.1X Status:      Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled:  Enabled
Re-authen Period:   1000 sec
Quiet Timer Period: 1000 sec
Tx Timer Period:    10 sec
Supplicant Timeout: 10 sec
Server Timeout:     10 sec
Re-authen Max:      5 times
Maximum Request:    3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
Eapol Tag Enable:   Disabled
Authorization Mode:  Group Server

```

```

Ruijie# show dot1x

```

show dot1x	802.1x

dot1x

- **dot1x probe-timer**
- **dot1x client-probe enable**

dot1x probe-timer

dot1x probe-timer{interval | alive}interval

no dot1x probe-timer

Ruijie#

no

alive

interval

interval hello

Ruijie#

Hello 20

250

Ruijie#

⏏

Ruijie#

show dot1x 802.1x

⏏

Ruijie#

hello 30 , 120

Ruijie# **configure terminal**

Ruijie(config)# **dot1x probe-timer interval 30**

Ruijie(config)# **dot1x probe-timer alive 120**

Server Timeout: 10 sec
Re-authen Max: 5 times
Maximum Request: 3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Enabled
Eapol Tag Enable: Disabled
Authorization Mode: Group Server

list-name

```

Ruijie# configure terminal
Ruijie(config)# aaa new-model
Ruijie(config)# aaa authentication dot1x default group radius
Ruijie(config)# dot1x authentication default
Ruijie(config)# end
Ruijie#

```

aaa domain
auth

```

Ruijie# configure terminal
Ruijie(config)# aaa new-model
Ruijie(config)# aaa authentication dot1x default group radius
Ruijie(config)# dot1x authentication default
Ruijie(config)# end
Ruijie#

```

Ruijie#

aaa new-model	AAA
aaa authentication dot1x	

dot1x accounting

```

Ruijie# configure terminal
Ruijie(config)# aaa new-model
Ruijie(config)# aaa authentication dot1x default group radius
Ruijie(config)# dot1x accounting {default | list-name}
Ruijie(config)# no dot1x accounting {default | list-name}
Ruijie(config)# end
Ruijie#

```

default
list-name

default

Г Д

W

Г Д

dot1x

W

aaa domain

```
enable      dot1x accounting
```

W

1.

AAA

٤ ١١

Г Д

group radius

W

```
Ruijie# configure terminal
```

```
Ruijie(config)# aaa new-model
```

```
Ruijie(config)#aaa accounting network
```

W

W

W

auth-address table

W

W

Ruijie#

show dot1x auth-address-table	802.1X

802.1x 山

```
no dot1x auth-mode
```

pap 802.1x PAP

EAP-MD5

W

Г Д

Г Д

Ш

Г Д

show dot1x

Ш

Г Д

802.1X tag

Ruijie# **configure terminal**

Ruijie(config)# **dot1x eapol-tag**

Ruijie(config)# **end**

Ruijie#

Г Д

show dot1x	802.1x Ш

dot1x max-req

DOT1X

DOT1X

DOT1X

Ш

Ш

no

Ш

dot1x max-req count

no dot1x max-req

Г Д

count

Ш

Г Д

3 Ш

Г Д

Ш

Г Д

show dot1x

Ш

Г Д

802.1x 7

Ruijie# **configure terminal**

dot1x port-control-mode {mac-based | port-based}

no dot1x port-control-mode

Г Д

mac-based mac 802.1X

port-based 802.1X

Г Д

mac-based

Г Д

Ш

Г Д

show dot1x port-control 802.1x Ш

Г Д

802.1x

Ruijie(config)#

Г А

Г А

Ш

Г А

Ш

Г А

802.1x

```
Ruijie# configure terminal
Ruijie(config)# dot1x stationarity enable
Ruijie(config)# end
Ruijie#
```

Г А

dot1x

- **show dot1x**
- **show dot1x auth-address-table**
- **show dot1x auto-req**
- **show dot1x private-supPLICANT-only**
- **show dot1x max-req**
- **show dot1x port-control**
- **show dot1x probe-timer**
- **show dot1x re-authentication**
- **show dot1x reauth-max**
- **show dot1x summary**
- **show dot1x timeout**
- **show dot1x user id**

show dot1x

802.1x

Ш

show dot1x

Г А

Ш

Г А

Ш

Г А

Ш

Г А

Ш

Г А

Ruijie# **show dot1x**

802.1X Status: Enabled

Authentication Mode: EAP-MD5

Authed User Number: 0

Re-authen Enabled: Disabled

Re-authen Period: 3600 sec

Quiet Timer Period: 10 sec

Tx Timer Period: 3 sec

802.1X timeout server-timeout

山

dot1x re-authentication	W
dot1x timeout quiet-period	W
dot1x timeout re-authperiod	W
dot1x timeout server-timeout	W
dot1x timeout supp-timeout	W
dot1x timeout tx-period	W

show dot1x auto-req

802.1x

W

show dot1x auto-req

r A

r A

W

r A

W

r A

W

r A

Ruijie# **show dot1x auto-req**

Auto-Req: Disabled
 User-Detect : Enabled
 Packet-Num : 0
 Req-Interval: 30 Seconds
 Ruijie#

r A

--	--

dot1x auth-mode	802.1x Ⅲ
dot1x max-req	Ⅲ
dot1x port-control auto	Ⅲ
dot1x reauth-max	
dot1x re-authentication	Ⅲ
dot1x timeout quiet-period	Ⅲ
dot1x timeout re-authperiod	Ⅲ
dot1x timeout server-timeout	Ⅲ
dot1x timeout supp-timeout	Ⅲ
dot1x timeout tx-period	Ⅲ

show dot1x max-req

Ⅲ

show dot1x max-req

```

r      A

```

```

r      A

```

Ⅲ

```

r      A

```

Ⅲ

```

r      A

```

Ⅲ

```

r      A

```

```

Ruijie# show dot1x max-req
max-req: 2 times

```

Г Д

dot1x auth-mode	802.1x Ш
dot1x max-req	Ш
dot1x port-control auto	Ш
dot1x reauth-max	
dot1x re-authentication	Ш
dot1x timeout quiet-period	Ш
dot1x timeout re-authperiod	Ш
dot1x timeout server-timeout	Ш
dot1x timeout supp-timeout	Ш
dot1x timeout tx-period	Ш

show dot1x port-control

Ш

show dot1x port-control [*interface interface*]

Г Д

interface

Г Д

Ш

Г Д

Ш

Г Д

Ш

Г Д

```
Ruijie# show dot1x port-control
interface dyn-user static-user max-user qos
```


Г А

Ruijie# show dot1x probe-timer

Hello Interval: 20 Seconds

Hello Alive: 250 Seconds

Ruijie#

Г А

dot1x auth-mode	802.1x Ⅲ
dot1x max-req	Ⅲ
dot1x port-control auto	Ⅲ
dot1x reauth-max	
dot1x re-authentication	Ⅲ
dot1x timeout quiet-period	Ⅲ
dot1x timeout re-authperiod	Ⅲ
dot1x timeout server-timeout	Ⅲ
dot1x timeout supp-timeout	Ⅲ
dot1x timeout tx-period	Ⅲ

show dot1x re-authentication

show dot1x re-authentication

Г А

Ⅲ

Г А

Ⅲ

Г А

W

Г А

Г А

```
Ruijie# show dot1x re-authentication
reauth-enabled: disabled
Ruijie#
```

Г А

dot1x auth-mode	802.1x W
dot1x max-req	W
dot1x port-control auto	W
dot1x reauth-max	
dot1x re-authentication	W
dot1x timeout quiet-period	W
dot1x timeout re-authperiod	W
dot1x timeout server-timeout	W
dot1x timeout supp-timeout	W
dot1x timeout tx-period	W

show dot1x reauth-max

```
show dot1x reauth-max
```

Г А

W

Г А

W

Г Д

Ш

Г Д

Г Д

```
Ruijie# show dot1x reauth-max
reauth-max: 2 times
Ruijie#
```

Г Д

dot1x auth-mode	802.1x Ш
dot1x max-req	Ш
dot1x port-control auto	Ш
dot1x reauth-max	

1
 1
 1

1
 1
 1

1
 1

```

Ruijie# show dot1x summary
ID      MAC      Interface VLAN Auth-State
Backend-State Port-Status Type
-----
1 00d0f8000000 Gi0/1      1 Authenticated Idle
Authed      Static
Ruijie#

```

1
 1

dot1x auth-mode	802.1x 1
dot1x max-req	1
dot1x port-control auto	1
dot1x reauth-max	
dot1x re-authentication	1
dot1x timeout quiet-period	1
dot1x timeout re-authperiod	1
dot1x timeout server-timeout	1
dot1x timeout supp-timeout	1
dot1x timeout tx-period	1

show dot1x user id

dot1x port-control auto	W
dot1x reauth-max	
dot1x re-authentication	W
dot1x timeout quiet-period	W
dot1x timeout re-authperiod	W
dot1x timeout server-timeout	W
dot1x timeout supp-timeout	W
dot1x timeout tx-period	W

show dot1x timeout

802.1X

show dot1x timeout quiet-period

show dot1x timeout re-authperiod

show dot1x timeout server-timeout

show dot1x timeout supp-timeout

show dot1x timeout tx-period

r A

W

r A

W

r A

W

r A

r A

Ruijie# show dot1x timeout quiet-period

quiet-period: 60 sec

Ruijie#

Г Д

dot1x auth-mode	802.1x Ш
dot1x max-req	Ш
dot1x port-control auto	Ш
dot1x reauth-max	
dot1x re-authentication	Ш
dot1x timeout quiet-period	Ш
dot1x timeout re-authperiod	Ш
dot1x timeout server-timeout	Ш
dot1x timeout supp-timeout	Ш
dot1x timeout tx-period	Ш

default

**aaa authentication {dot1x | enable | ppp | login} default group
radius**

Г А

Ш

Г А

AAA

AAA

Ш

aaa authentication

Ш

Ш

Г А

RDS_D1X AAA

Ш

RADIUS

RADIUS

Ш

Ruijie(config)# **aaa authentication dot1x rds_d1x group
radius local**

Г А

aaa new-model	AAA
dot1x authentication	DOT1x
ppp authentication	PPP
login authentication	Login
username	

RGOS

RADIUS

- o **aaa accounting network**
- o **aaa accounting update**
- o **aaa accounting update periodic**
- o **show aaa method-list**
- o **debug aaa**

aaa accounting network

aaa accounting network 10.10.10.0/24 no

W

```
aaa accounting network {default | list-name} start-stop group
radius
```

no aaa accounting network {default | *list-name*}

Г Д

```
network                               DOT1X  PPP  W
```

resource 

list-name ▮

start-stop

W

group

radius	RADIUS
--------	--------

Г Д

Г Д

W

Г Д

RGOS

W

start-stop 

Г Д

RADIUS

Ruijie(config)# **aaa accounting network start-stop group radius**

Г Д

aaa new-model	AAA
aaa authorization network	AAA
aaa authentication	AAA
username	

aaa accounting update

aaa accounting update

Щ no

Щ

aaa accounting update

no aaa accounting update

Г Д

Г Д

Щ

Г Д

Щ

Г Д

AAA

Щ

AAA

Щ

Г Д

Щ

Ruijie(config)# **aaa new-model**

Ruijie(config)#

Г Д

aaa new-model	AAA

aaa accounting network

show aaa method-list

```
method-list
show aaa method-list

EXEC show aaa

Ruijie# show aaa method-list
```

AAA

- AAA
 - **aaa domain enable**
 - **aaa domain {default | *WORD*}**
 - **authentication**
 - **accounting**
 - **authorization**
 - **state {block | active}**
 - **username-format {without-domain | with-domain}**
 - **access-limit <1-1024>**
 - **show aaa domain [*word*]**

aaa domain enable

```
AAA
AAA
no aaa domain enable

aaa domain enable

no aaa domain enable
```


Ruijie(config-domain)#

Show aaa domain	
-----------------	--

accounting

no ▮

accounting { update | network } { default | *methodlist* }

no accounting { update | network }

└ A

default: ▮

methodlist ▮

└ A

default ▮

└ A

▮

└ A

▮

└ A

▮

Ruijie(config)# **aaa domain ruijie.com**

Ruijie(config-domain)# **accounting network default**

└ A

aaa new-model	AAA
aaa domain enable	AAA
Show aaa domain	

authorization

no ▮

authorization { ip-auth-mode | network } { default | *methodlist* }

no authorization { ip-auth-mode | network }

Ruijie

W

Ruijie

W

Ruijie(config)# **aaa domain** *ruijie.com*

Ruijie(config-domain)# **state block**

Ruijie

aaa new-model	AAA
aaa domain enable	AAA
Show aaa domain	

username-format

NAS

no

W

username-format {without-domain | with-domain}

no username-format

Ruijie

without-domain: W

with-domain W

Ruijie

W

Ruijie

W

Ruijie

NAS

W

Ruijie

W

Ruijie(config)# **aaa domain** *ruijie.com*

Ruijie(config-domain)# **username-domain without-domain**

Г Д

aaa new-model	AAA
aaa domain enable	AAA
Show aaa domain	

access-limit <1-1024>

1X

no

Ш

access-limit <1-1024>

no access-limit

Г Д

<1-1024>:

802.1X

Г Д

Г Д

Г Д

Ш

Г Д

Ш

Ruijie(config)# **aaa domain ruijie.com**

Ruijie(config-domain)# **access-limit 20**

Г Д

aaa new-model	AAA
aaa domain enable	AAA
Show aaa domain	

show aaa domain

EXEC **show aaa domain** **▮**

show aaa domain {Domain name|Default}

▮ ▮

Domain name

Default:

▮ ▮

EXEC **▮**

▮ ▮

Ruijie(config)#show aaa domain ruijie.com

=====**Domain ruijie.com**=====

State: Active

Username format: Without-domain

Access limit: No limit

802.1X Access statistic: 0

Selected method list:

authentication login default

Ruijie(config)#

AAA

- **show aaa group**
- **aaa group server**
- **server ip-addr authen-port port1 acct-port port2**

show aaa group

```
AAA
show aaa group

r  A

W

r  A

r  A

W

r  A

AAA

r  A

W
```

```
Ruijie# show aaa group
Group Name:  ss
Group Type:  radius
Referred:    2
Server List:
IP Address:  192.168.217.64
Authentication Port: 1812
Accounting Port: 1813
Referred:    1
Ruijie#
```

```
r  A
```

aaa group server	AAA

aaa group server

```
AAA
no

aaa group server radius name

no aaa group server radius name

r  A
```

AAA

```

    name                                     "radius" "tacacs+"
r      d
                                     W
r      d
                                     AAA      Radius      W
r      d
                                     W
                                     Ruijie(config)#
```

Г Д

III

```
Ruijie(config)# aaa group server radius ss
Ruijie(config-gs-radius)# server 192.168.4.12
acct-port 5 authen-port 6
Ruijie(config-gs-radius)# end
Ruijie# show aaa group
Group Name: ss
Group Type: radius
Referred: 2
Server List:
IP Address: 192.168.4.12
Authentication Port: 6
Accounting Port: 5
Referred: 1
Ruijie#
```

Г Д

aaa group server	aaa
show aaa group	aaa

AAA

- **aaa new-model**
- **debug aaa**
- **show aaa method-list**
- **aaa local authentication attempts**
- **aaa local authentication lockout-time**
- **show aaa user lockout**
- **clear aaa local user lockout**

aaa new-model

RGOS	AAA			aaa
new-model	AAA	no	AAA	III
aaa new-model				
no aaa new-model				

山

AAA

山

AAA

aaa new-model

AAA

山

AAA

AAA

AAA

山

AAA

山

lijie(config)# aaa new-model

1

Ruijie#

Ruijie#

1

Ruijie#

AAA

1

Ruijie#

AAA

1

Ruijie# **show aaa method-list**

Authentication method-list

aaa authentication login default group radius

aaa authentication ppp default group radius

aaa authentication dot1x default group radius

aaa authentication dot1x san-f local group angel group

rain none

aaa authentication enable default group radius

Accounting method-list

aaa accounting network default start-stop group radius

Authorization method-list

aaa authorizing network default group radius

Ruijie#

Ruijie#

aaa authentication	
aaa authentication	
aaa authorization	
aaa accounting	

aaa local authentication attempts

login

aaa local authentication attempts <1-2147483647> 1

Ruijie#

<1-2147483647> 1

Ruijie#

3

login

Ruijie#**configure terminal**

Ruijie(config)#**aaa local authentication attempts 6**

Ruijie0(config)#

Show running-config	
Show aaa logout	login

aaa local authentication logout-time

login

aaa local authentication logout-time <1-2147483647>

<1-2147483647>

15

login

Ruijie#**configure terminal**

Ruijie(config)#**aaa local authentication logout-time 5**

Ruijie(config)#

Г Д

Show running-config	
Show aaa logout	login

show aaa user logout

Ш

show aaa user logout {all | user-name <word>}

Г Д

ID

Г Д

Г Д

Ш

Г Д

Ш

Г Д

ruijie#

Ruijie#show aaa user logout all

Г Д

Show running-config	
Show aaa logout	login

clear aaa local user logout

clear aaa local user logout {all | user-name <word>}

Г Д

IDШ

Г Д

Г Д

Ш

Г Д

Ш

Г Д

Ruijie# **clear aaa local user logout all**

Г Д

Show running-config	
Show aaa logout	login

RADIUS

RADIUS

RADIUS

- **ip radius source-interface**
- **radius-server host**
- **radius-server key**
- **radius-server retransmit**
- **radius-server timeout**
- **radius-server dead-time**
- **radius attribute**
- **radius set qos cos**
- **radius vendor-specific extend**

ip radius source-interface

		radius			ip radius	
		source-interface	▯▯▯	no	RADIUS	▯▯▯
		ip radius source-interface	<i>interface</i>			
		no radius source-interface				
Γ	Δ					
		<i>Interface</i>	radius			
Γ	Δ					
		radius		▯▯▯		
Γ	Δ					
			▯▯▯			
Γ	Δ					
		radius			nas	
		radius		▯▯▯		ip
		radius			▯▯▯	
Γ	Δ					

```

radius
radius
Ruijie(config)# ip radius source-interface
fastEthernet 0/0

```

└─┬─┘

radius-server host	RADIUS
ip address	ip

radius-server host

```

RADIUS
no RADIUS
radius-server
radius-server host {hostname | ip-address} [auth-port port-number]
[acct-port port-number][key 0|7 text]
no radius-server host {hostname | ip-address}

```

└─┬─┘

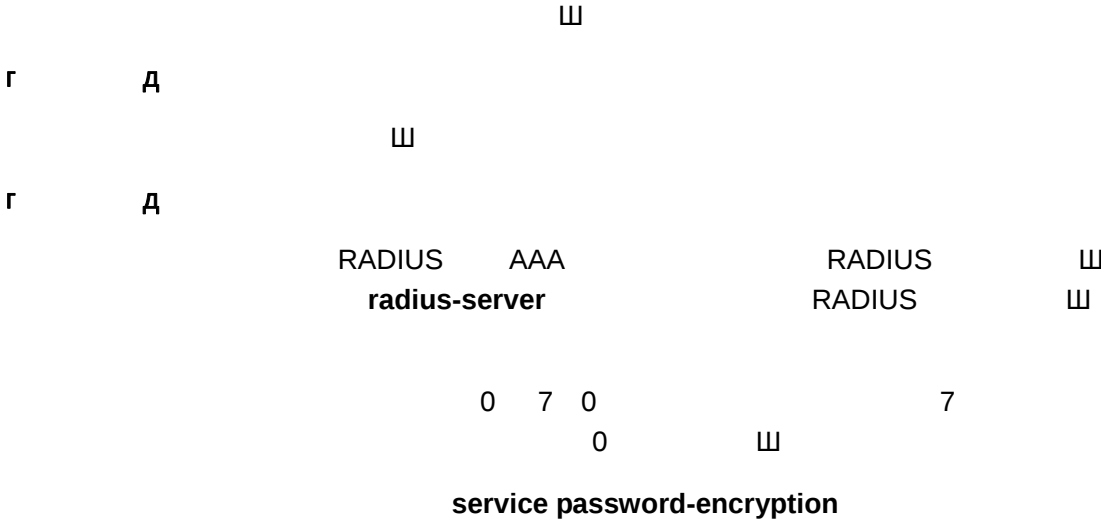
```

hostname: RADIUS DNS
ip-address: RADIUS IP
auth-port: RADIUS UDP
port-number: RADIUS UDP 0
acct-port: Radius UDP
port-number: RADIUS UDP 0
text
0
7

```

└─┬─┘

RADIUS



7

r A

W

r A

W

r A

RADIUS RADIUS RADIUS RADIUS

radius-server host ip key

W

0 7 0 7
0 W

service password-encryption

RADIUS

7 show running RADIUS
show running RADIUS

W

r A

RADIUS aaa

Ruijie(config)#radius-server key aaa

r A

radius-server host	RADIUS
radius-server retransmit	RADIUS
radius-server timeout	RADIUS

radius-server retransmit

RADIUS

radius-server retransmit W no

W

radius-server retransmit retries

no radius-server retransmit

```

r      A
      retries RADIUS
r      A
      3
r      A
      3
r      A
      AAA
      RADIUS
r      A
      4
Ruijie(config)# radius-server retransmit 4

```

r	A	
	radius-server host	RADIUS
	radius-server key	RADIUS
	radius-server timeout	RADIUS

radius-server timeout

```

RADIUS
radius-server timeout no
radius-server timeout seconds
no radius-server timeout
r      A
seconds 1-1000
r      A
5
r      A
r      A

```

▮

Г Д

10

Ruijie(config)# radius-server timeout 10

Г Д

radius-server host	RADIUS
radius-server retransmit	RADIUS
radius-server key	RADIUS

radius-server deadtime

t
deadtime RGOS RADIUS
radius-server deadtime▮
no ▮

radius-server deadtime *minutes*
no radius-server deadtime

Г Д

minutes ▮ 1-1000 ▮

Г Д

5

Г Д

▮

Г Д

▮

Г Д

10

Ruijie(config)# radius-server deadtime 10

Г Д

radius-server host	RADIUS
radius-server retransmit	RADIUS
radius-server key	RADIUS
radius-server timeout	RADIUS

radius attribute

**radius ttribute{<*id*> | down-rate-limit | dscp | mac-limit |
up-rate-limit}**

RADIUS

15	file-name-4	15
----	-------------	----

19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilege	22
23	login privilege	42
24	limit to user number	50

radius

radius

radius

radius

radius

max up-rate 211

Ruijie(config)# radius attribute 16 vendor-type 211

radius

radius set qos cos	radius qos cos

radius set qos cos

radius qos cos

radius set qos cos

no radius set qos cos

radius

radius

qos dscp

radius

radius

radius

qos

cos

dscp

```

r      A

```

```

Ruijie(config)# radius set qos cos

```

```

r      A

```

radius vendor-specific extend	Radius id

radius vendor-specific extend

id

radius vendor-specific extend

no radius vendor-specific extend

```

r      A

```

```

r      A

```

id

```

r      A

```

```


```

```

r      A

```

id

```


```

```

r      A

```

```

Ruijie(config)# radius vendor-specific extend

```

```

r      A

```

radius attribute	
radius set	qos cos

authen port: 77

radius-server host	RADIUS
radius-server retransmit	RADIUS
radius-server key	RADIUS
radius-server timeout	RADIUS

show radius vendor-specific

RADIUS Ⅲ

show radius vendor-specific

└─ A

Ⅲ

└─ A

└─ A

Ⅲ

└─ A

radius

└─ A

```
Ruijie# show radius vendor-specific
id   vendor-specific      type-value
-----
1    max down-rate         76
2    qos                   77
3    user ip               3
4    vlan id               4
5    version to client    5
6    net ip                6
7    user name             7
8    password              8
9    file-diractory       9
10   file-count            10
11   file-name-0           11
12   file-name-1           12
13   file-name-2           13
14   file-name-3           14
15   file-name-4           15
```

16	max up-rate	75
17	version to server	17
18	flux-max-high32	18
19	flux-max-low32	19
20	proxy-avoid	20
21	dailup-avoid	21
22	ip privilege	22
23	login privilege	42
24	limit to user number	50

r A

radius-server host	RADIUS
radius-server retransmit	RADIUS
radius-server key	RADIUS
radius-server timeout	RADIUS

Г Д

server	TACACS+ server

server(TACACS+)

TACACS+

Ш

server *ip-address*

no server *ip-address*

Г Д

ip-address TACACS+

Г Д

Г Д

TACACS+

Ш

Г Д

aaa group server tacacs+

TACACS+

Ш

TACACS+

tacacs-server host

Ш

TACACS+

Ш

Г Д

tac1 TACACS+

1.1.1.1 TACACS+

Ruijie(config)# **aaa group server tacacs+ tac1**

Ruijie(config-gs-tacacs+)# **server 1.1.1.1**

Г Д

aaa group server tacacs+	TACACS+

ip tacacs source-interface

TACACS+

Ш

ip tacacs source-interface

interface

no ip tacacs source-interface

г

А

Interface

TACACS+

г

А

TACACS+

Ш

г

А

Ш

г

А

TACACS+

nas

Ш

ip

TACACS+

Ш

г

А

TACACS+

fastEthernet 0/0

ip

TACACS+

Ruijie(config)# ip tacacs source-interface fastEthernet 0/0

г

А

tacacs-server host	TACACS+
ip address	ip

tacacs-server host

		TACACS+	IP	Ш
		tacacs-server host <i>ip-address</i> [port <i>integer</i>] [timeout <i>integer</i>] [key <i>string</i>]		
		no tacacs-server host <i>ip-address</i>		
г	А	<i>Ip-address</i>	TACACS+	IP Ш

```

port integer      TACACS+      TCP
timeout integer   TACACS+      3
key string        TACACS+ client 3

r      A
      TACACS+  3

r      A
      3

r      A
      TACACS+  AAA      TACACS+
      3      tacacs-server  TACACS+
      3

r      A
      TACACS+

Ruijie(config)# tacacs-server host 192.168.12.1

```

```

r      A

```

aaa authentication	AAA
tacacs-server key	TACACS+
tacacs-server timeout	TACACS+

tacacs-server key

```

      TACACS+      3

tacacs-server key [0 | 7] string
no tacacs-server key

r      A
      string
      0 | 7      0      7      3

r      A
      3

r      A

```

Г Д

Г Д

Г Д

tacacs-server host	TACACS+
tacacs-server timeout	TACACS+

TACACS+ III

Г Д

Г Д

Г Д

Г Д

Г Д

<http://www.ruijie.com.cn>

Г Д

--	--

TACACS+
config)# TTp5pabD'G7BpQbž26Tppu'@řppu'@řpp

TACACS+ ǎ ¥ 𐄂

ǎ 𐄂

```
Ruijie# show tacacs
Tacacs+ Server : 172.19.192.80/49
Socket Opens: 0
Socket Closes: 0
Total Packets Sent: 0
Total Packets Recv: 0
Reference Count: 0
```

ǎ 𐄂

--	--

~ 注意:

no crypto key generate
crypto key zeroize

Г Д

Ruijie# **configure terminal**
Ruijie(config)# **crypto key generate rsa**

Г Д

show ip ssh	SSH Server Ш
crypto key zeroize {rsa dsa}	DSA RSA SSH Server Ш

Г Д

RGOS10.1

crypto key zeroize

SSH

crypto key zeroize {rsa | dsa}

Г Д

rsa	RSA
dsa	DSA

Г Д

Г Д

Г Д

DISABLE Ш SSH Server SSH Server
service ssh-server Ш **no enable**

Г Д

```
Ruijie# configure terminal
Ruijie(config)# crypto key zeroize rsa
```

Г Д

show ip ssh	SSH Server	Ш
crypto key generate {rsa dsa}	DSA RSA	Ш

Г Д

RGOS10.1

ip ssh version

SSH server Ш no
Ш

```
ip ssh version {1 | 2}
no ip ssh version
```

Г Д

--	--

1 SSH Server SSH1 SSH Server SSH1 ŷ

Г Д

show ip ssh	ssh-server Ш

Г Д

RGOS10.1

ip ssh authentication-retries

SSH Server Ш no

Ш

ip ssh authentication-retries *retry times*

no ip ssh authentication-retries

Г Д

<i>retry times</i>	Ш

Г Д

3 Ш

no ip ssh

authentication-retries

Ш

Г Д

Г Д

SSH Server Ш SSH Ш

Server

show ip ssh SSH Server Ш

Г Д

2

Ruijie# **configure terminal**

Ruijie(config)# **ip ssh ssh authentication-retries 2**

Г Д

show ip ssh	SSH Server Ш

Г Д

RGOS10.1

SSH

SSH

- **show ip ssh**
- **show ssh**
- **show crypto key mypubkey**
- **disconnect ssh**

show ip ssh

SSH Server

Ш

show ip ssh

Г Д

Г Д

Г Д

Г Д

SSH Server

Ш

Ч

SSH

Server Ч

Ч

Ш

SSH

SSH

Ш

Г Д

Ruijie# **show ip ssh**

Г Д

ip ssh version {1 2}	SSH Server Ш
ip ssh time-out time	SSH Server Ш

ip ssh authentication-retries retry times
--

SSH Server Ш

г А

RGOS10.1

show ssh

SSH

Ш

show ssh

г А

г А

г А

г А

		SSH	Ш	VTY	Ч
SSH	Ч	Ч	Ч	Ш	

г А

Ruijie# show ssh

г А

г А

RGOS10.1

show crypto key mypubkey

SSH Server

Ш

show crypto key mypubkey {rsaldsa}

г А

--	--

rsa	RSA
dsa	DSA

Г Д

Г Д

Г Д

SSH Server

Ч Ч Ш Ш

Г Д

Ruijie# **show crypto key mypubkey rsa**

Г Д

crypto key generate {rsa dsa}	DSA RSA Ш

Г Д

RGOS10.1

disconnect ssh

SSH Ш

disconnect ssh [vty] session-id

Г Д

<i>session-id</i>	SSH Ш

Г Д

Г Д

Г Д

Г Д

г Д 4b8BXFXAb8DPXA6P4HkH8kXEyfU0vE}/A<c1L

QoS

QoS

QoS

1 policy-map

IP-Precedence to DSCP

IP-Precedence	0	1	2	3	4	5	6	7
DSCP	0	8	16	24	32	40	48	56

DSCP to CoS

DSCP	0	8	16	24	32	40	48	56
------	---	---	----	----	----	----	----	----

wrr-queue bandwidth *weight1 ... weightn*

no wrr-queue bandwidth

Г Д

weight1...weightn n n

no

Г Д

weight1: ...: weightn = 1:...:1

Г Д

Г Д

ip-prec-dscp maps

mls qos map dscp-cos

DSCP CoS

mls qos map dscp-cos *dscp-list* to *cos*

no mls qos map dscp-cos

r **A**

dscp-list

cos 0 7

no

r **A**

r **A**

r **A**

Ruijie(config)# **mls qos map dscp-cos** 8 10 16 18 to 0

r **A**

show mls qos maps dscp-cos maps,dscp-cos maps
ip-prec-dscp maps

interface rate-limit

rate-limit {**input** | **output**} *bps* *burst-size*

no rate-limit

r **A**

input

output

bps

burst-size (Kbyte)dscp-list

QOS

no

г Д

weight1...weight8

no

г Д

г Д

г Д

Ruijie(config)# **drp-queue bandwidth 1 2 3 4 5 6 7 8**

г Д

show mls qos queueing

show mls qos interface

QoS

show mls qos interface *interface-id* [**policers**]

г Д

interface-id

policers

police

г Д

QOS

г Д

г Д

Ruijie# **show mls qos interface fastEthernet 0/1**

show mls qos queueing

QoS

(cos-to-queue map, wrr weight)

show mls qos queueing

Г Д

Г Д

Ruijie# **show mls qos queueing**

show mls qos scheduler**show mls qos scheduler**

Г Д

Г Д

Ruijie# **show mls qos scheduler**

show mls qos maps

dscp-cos maps,dscp-cos maps ip-prec-dscp maps

show mls qos maps [cos-dscp | dscp-cos]

Г Д

cos-dscp cos-dscp maps

dscp-cos dscp-cos maps

Г Д

dscp-cos maps dscp-cos maps

Г Д

Г Д

Ruijie# **show mls qos maps**

show mls qos rate-limit

4

0<35zpl2201Id05049TM20Tt3610.3073id1r02td08de37d17AidTt88TF08>e6<1B4p1C8tB

Ruijie(config)# **rldp enable**

r **A**



no rldp detect-max

└─┘ A

num , 2-10

└─┘ A

2

└─┘ A

└─┘ A

└─┘ A

5 :

Ruijie(config)# **rldp detect-max 5**

└─┘ A

rldp detect-interval	

rldp port

rldp

**rldp port {unidirection-detect | bidirection-detect | loop-detect }
{warning | shutdown-svi | shutdown-port | block}**

no rldp port { unidirection-detect | bidirection-detect | loop-detect }

└─┘ A

unidirection-detect

bidirection-detect

loop-detect

warning

shutdown-svi shutdown svi

shutdown-port shutdown

block

└─┘ A

「 A

⌵

「 A

RLDP

RLDP

⌵

「 A

fas 0/1

rldp

⌵

Ruijie(config)# **interface fas 0/1**

Ruijie(config-if)# **rldp port loop-detect block**

「 A

rldp enable	rldp

rldp reset

rldp shutdown disable

rldp ⌵

rldp reset

「 A

「 A

⌵

「 A

⌵

「 A

⌵

「 A

Ruijie# **rldp reset**

「 A

rldp enable	Rldp

RLDP

TPP

topology guard

▮

[no] **tp-guard port enable**

Г Д

Г Д

Г Д

Г Д

CPU

▮

(AP)

▮

Г Д

Ruijie(config-if)# **tp-guard port enable**

Ruijie(config-if)# **no tp-guard port enable**

Г Д

topology guard

TPP

show tpp

▮

show tpp

Г Д

Г Д

Г Д

1. 配置TPP
 2. 配置TPP

1. 配置TPP

Ruijie# show tpp
 topology guard

-
- cat
 - cd
 - cp
 - ls
 - makefs
 - mkdir
 - mv
 - pwd
 - rm
 - rmdir

cat

⌘

cat type {bin | text} file path

cat file path type {bin | text}

r

A

bin	
text	
path	(

cp

语法

```
cp dest {DESTINE_FILE | DIRECTORY} sour SOURCE_FILE
cp sour SOURCE_FILE dest {DESTINE_FILE | DIRECTORY}
```

参数

DESTINE_FILE
DIRECTORY
SOURCE_FILE ()

选项

-r 递归复制目录

-d 复制目录属性

-p 保持文件属性

~ 注意:

cp

语法

语法

```
Ruijie# cp sour log.txt dest ../log_bak.txt
```

参数

ls

语法

```
ls PATHNAME
```

参数

бҮ

Ш

Г Д

г А

Ш

г А

Ш

г А

Ш

Ruijie# **pwd**

г А

rm

Ш

rm *FILE*

rmmdir

Ш

rmmdir *DIRECTORY*

Г А

DIRECTORY ,

Г А

Ш

logging on

```
 Ruijie(config)# logging on
                               no
                               logging on
                               no logging on
r      A
r      A
                               logging on
r      A
r      A
                               RGOS
                               Console
                               VTY
                               FLASH
                               Syslog
                               Server
                               1 Log
r      A
```

Ruijie(config)# no logging on

r A

logging buffered	
logging	Syslog Server
logging file flash:	FLASH

logging console

no logging buffered

Г Д

<i>buffer-size</i>	4K	128K Bytes	山
--------------------	----	------------	---

levell 0 7Ш

III

Г Д

4k Bytes

7Ш

Г Д

64K,

FLASH

6M

trace.txt

Ruijie(config)# logging file flash:trace

logging on	
show logging	
more flash	FLASH

logging console

no

logging console level

no logging console

level

0 7

1

Debugging (7)

show logging

6

Ruijie(config)# logging console informational

<http://www.ruijie.com.cn>

logging on	
show logging	

logging monitor

```

VTY telnet 4 SSH
no VTY
logging monitor level
no logging monitor
r A
level 1
r A
Debugging (7)
r A
r A
VTY terminal
monitor VTY
logging monitor
Logging monitor VTY
r A
VTY 6
Ruijie(config)# logging monitor informational
r A
```

logging on	
show logging	

logging trap

```

                                     Syslog Server
                                     |||
                                     no
                                     Syslog Server|||

logging trap level/
no logging trap

r      A
level/                                     |||
|||                                     1|||

r      A
Informational(6)

r      A

r      A

                                     Syslog Server
                                     |||
                                     logging
Syslog Server||| logging trap
|||

show logging                                     |||

r      A

                                     6
                                     202.101.11.22
Syslog Server
Ruijie(config)# logging 202.101.11.22
Ruijie(config)# logging trap informational

r      A
```

Г Д

Г Д

Syslog Server

Ш

Ш

Г Д

Loopback 0

Syslog

Ruijie(config)# **logging source ip 192.168.1.1**

Г Д

logging	Syslog server

logging facility

1	user-level messages
2	mail system
3	system daemons
4	security/authorization messages
5	messages generated internally by syslogd
6	line printer subsystem
7	network news subsystem
8	UUCP subsystem
9	clock daemon

datetime
16:53:07

Jul 27

г А

Ш RTC

Ш

г А

г А

Uptime

Ш

Datetime

Ш

г А

Log

Debug

Datetime

Ruijie(config)# **service timestamps debug datetime**

Ruijie(config)# **service timestamps log datetime**

г А

logging on	
service sequence-numbers	

service sysname

Ш

no

Ш

service sysname

no service sysname

г А

г А

Ш

г А

Г Д

Ш

Г Д

Mar 22 15:28:02 %SYS-5-CONFIG: Configured from console
by console

Ruijie# **config terminal**

Enter configuration commands, one per line. End with
CNTL/Z.

Ruijie(config)# **service sysname**

Ruijie(config)# **end**

Ruijie#

Mar 22 15:35:57 S20 %SYS-5-CONFIG: Configured from
console by console

Г Д

show logging	

more flash

FLASH

more flash:filename

Г Д

Filename

Г Д

Г Д

FLASH

"//f2/" "//f3/"

Ш

Ш

Г Д

FLASH

Ruijie# **more flash://f2/log.txt**

look up file in the extended flash://f2/log.txt

00004 2004-11-17 4:1:32 Ruijie: %5:Reload requested by Administrator. Reload Reason :Reload command

Г Д

logging file flash:	FLASH

clear logging

Ш

clear logging

Г Д

Г Д

Ш

Ш

Г Д

Ш

Ruijie# clear logging

Г Д

logging on	
show logging	
logging buffered	

show logging

Ч

Ш

show logging

r A

r A

r A

show logging

```
Ruijie# show logging
Syslog logging: enabled
Console logging: level debugging, 4 messages logged
Monitor logging: level informational, 0 messages logged
Buffer logging: level debugging, 6 messages logged
Timestamp debug messages: datetime
Timestamp log messages: disabled
Sequence log messages: enable
Trap logging: level debugging, 2 message lines logged, 0
reserved, 0 fail
logging to 202.101.11.22
logging to 192.168.200.112
Log Buffer (Total 4096 Bytes) : have written 680
00001 2004-11-17 10:20:59 Ruijie: %7:%LINK CHANGED:
Interface FastEthernet 0/0, changed state to up
00002 2004-11-17 10:20:59 Ruijie: %7:%LINE PROTOCOL
CHANGE: Interface FastEthernet 0/0, changed state to UP
00003 2004-11-17 10:57:18 Ruijie: %7:%LINK CHANGED:
Interface FastEthernet 0/1, changed state to
administratively down
00004 2004-11-17 10:57:21 Ruijie: %7:%LINK CHANGED:
Interface FastEthernet 0/1, changed state to down
00005 2004-11-17 10:57:41 Ruijie: %7:%LINK CHANGED:
Interface FastEthernet 0/1, changed state to
administratively down
00006 2004-11-17 10:57:43 Ruijie: %7:%LINK CHANGED:
Interface FastEthernet 0/1, changed state to down
```

Syslog logging	disabled enabled,
Console logging	

Monitor logging	VTY
Buffer logging	
Timestamp debug messages	Debug
Timestamp log messages	Log
Sequence log messages	
Trap logging	Syslog Server
Log Buffer	

logging on	
clear logging	

show logging count

show logging count

logging

count
show logging count

```
=====
SYS          CONFIG_I      5   1      Jul 6 10:29:57
-----
SYS TOTAL                                1
```

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logging count	
show logging	
clear logging	

- **device-priority**
- **device-description**
- **stack on**
- **show member**

device-priority [*member*] *priority*

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1 10

1W

write

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8

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show member	
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device-description

1

 2

device-description [**member** *member*] *description*

1

 2

member <i>member</i>	ID 31 member 1
<i>description</i>	31

1

 2

1

 2

write

31

1

 2

2 red-giant

Ruijie(config)# **device-description** member 2 red-giant

1

 2

<i>member</i>	ID	Ш
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```
Ruijie# show member
Member Mac Address      Priority Software Version
HardwareVersion Description
-----
1      00d0.f810.3323  1      RGOS 10.1.00(2),
Release(12889) 1.0      SWITCH
2      00d0.f822.33aa  1      RGOS 10.1.00(2),
Release(12889) 1.0      SWITCH
3      00d0.f822.33ae  1      RGOS 10.1.00(2),
Release(12889) 1.0      SWITCH
4      00d0.f822.33b0  1      RGOS 10.1.00(2),
Release(12889) 1.0      SWITCH
5      00d0.f822.33b2  1      RGOS 10.1.00(2),
Release(12889) 1.0      SWITCH
6      00d0.f824.23b4  1      RGOS 10.1.00(2),
Release(12889) 1.0      SWITCH
7      00d0.f833.44b4  1      RGOS 10.1.00(2),
Release(12889) 1.0      SWITCH
8      00d0.f855.33ae  1      RGOS 10.1.00(2),
Release(12889) 1.0      SWITCH
```